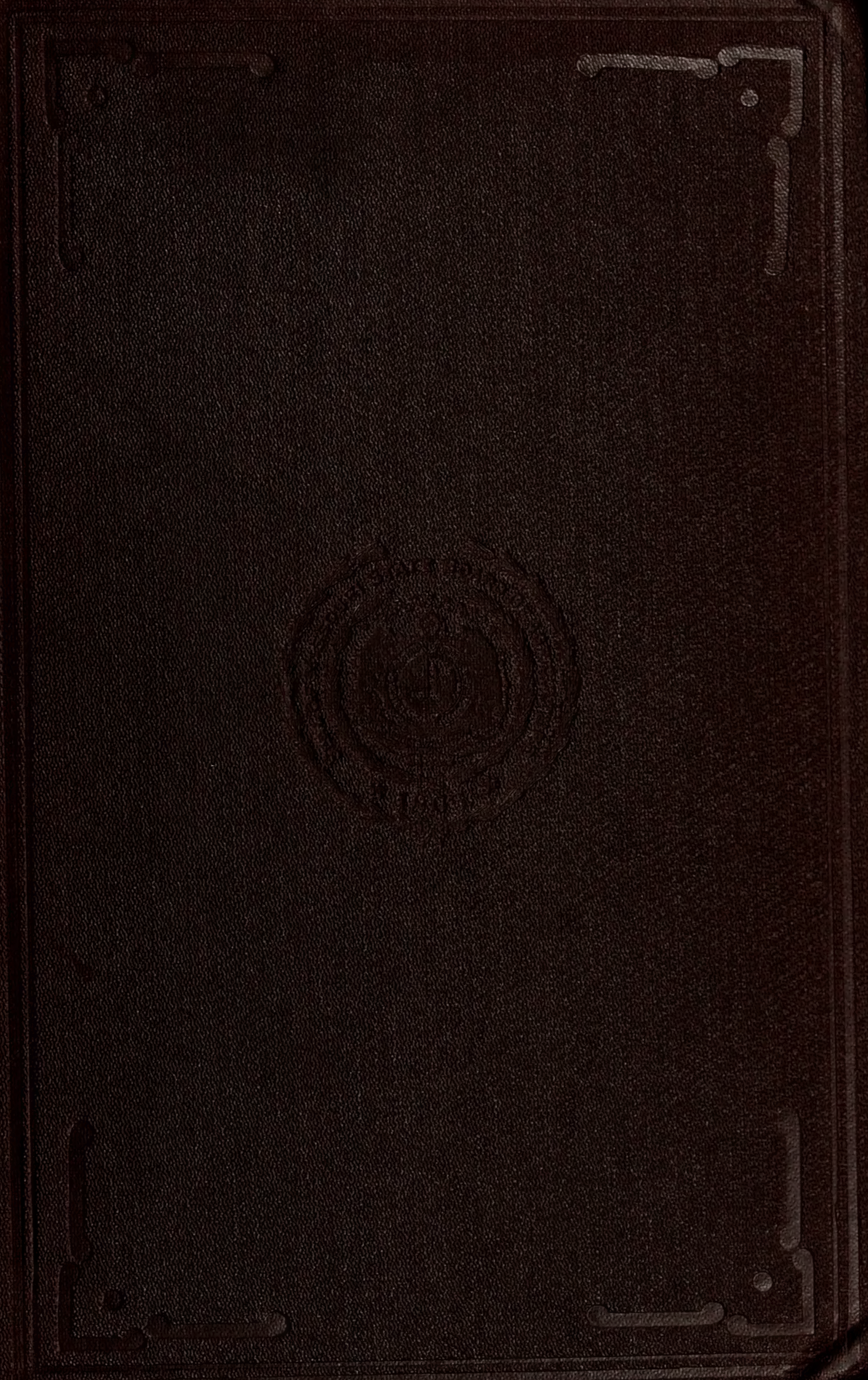

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FORTY-FIFTH ANNUAL REPORT

OF THE

Missouri State Board of Agriculture

A Record of the Work for the Year 1912

ALSO REPORT OF MISSOURI FARMERS' WEEK, 1913, ASSOCIATION
MEETINGS, FARM STATISTICS AND OTHER INFORMATION
AND PAPERS RELATING TO AGRICULTURE
AND ITS ALLIED INDUSTRIES

PUBLISHED 1913

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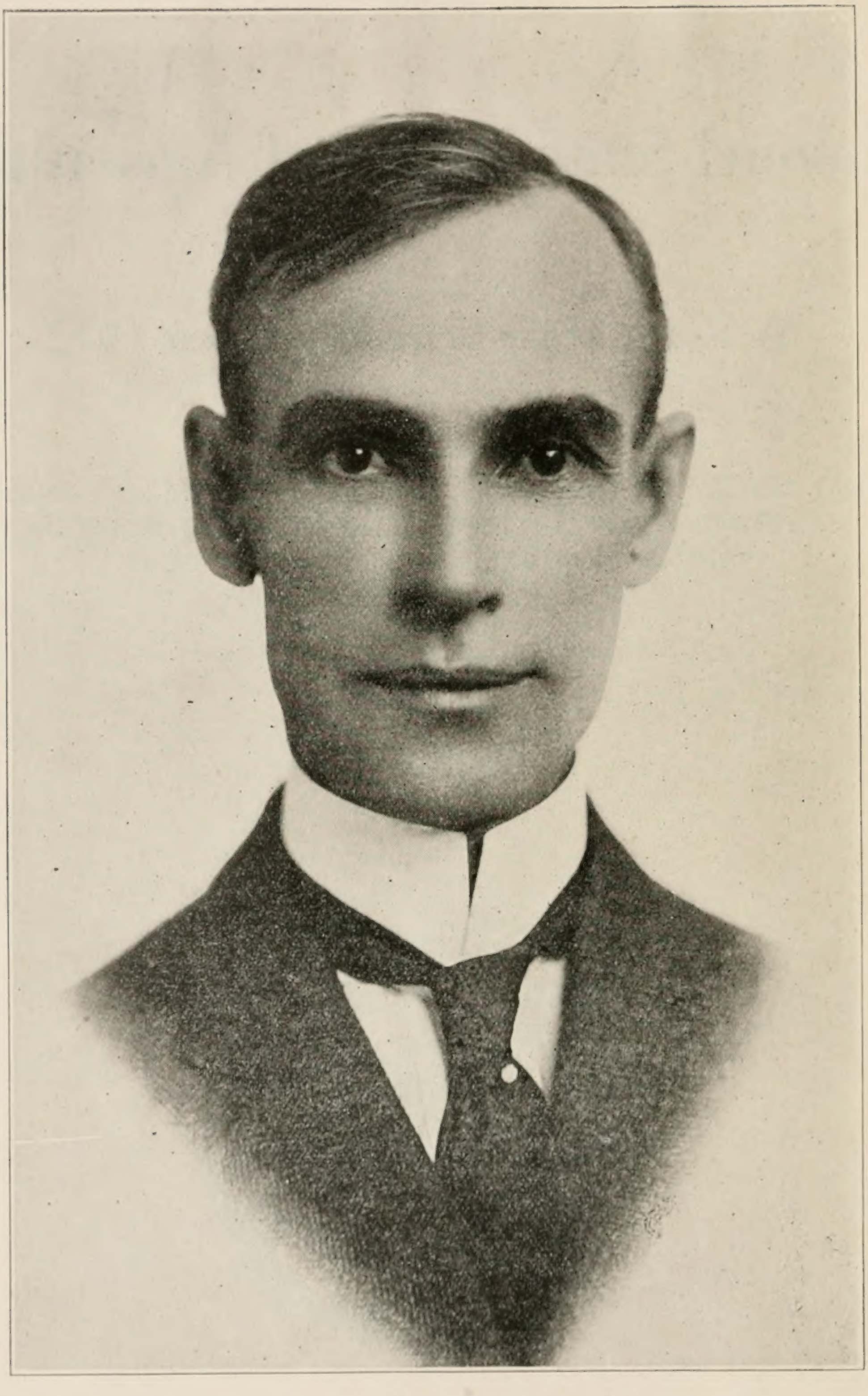

ELLIOTT W. MAJOR, GOVERNOR OF MISSOURI,
Ex Officio Member Missouri State Board of Agriculture.

OFFICERS OF THE STATE BOARD OF AGRICULTURE.

President—P. P. Lewis, Crescent.
Vice-President—W. R. Wilkinson, St. Louis.
Secretary—T. C. Wilson, Columbia.
Assistant Secretary—W. L. Nelson, Columbia.
Treasurer—W. A. Bright, Columbia.
Institute Lecturer—J. Kelly Wright, Columbia.
State Veterinarian—S. Sheldon, Columbia.
State Highway Engineer—Curtis Hill, Columbia.
Deputy State Highway Engineer—W. C. Davidson, Columbia.
Apiary Inspector—M. E. Darby, Springfield.
Dairy Commissioner—Dr. W. P. Cutler, Columbia.

EX OFFICIO MEMBERS.

Governor Elliott W. Major.
Superintendent of Schools W. P. Evans.
Dean Agricultural College F. B. Mumford.

CORPORATE MEMBERS.

(Term expires July 20, 1913.)

Cong. Dist.	Name.	Residence.	County.
6	Fred T. Munson	Osceola	St. Clair.
9	Charles Householder	Thompson	Audrain.
10	P. P. Lewis	Crescent	St. Louis.
11	Henry Steinmesch	St. Louis City.	
12	W. R. Wilkinson	St. Louis City.	

(Term expires July 20, 1914.)

2	John H. Brayton	Paris	Monroe.
3	H. C. Duncan	Osborn	DeKalb.
5	T. J. Hedrick	Buckner	Jackson.
13	E. E. Swink	Farmington	St. Francois.
14	C. M. Barnes	Marston	New Madrid.
16	A. T. Nelson	Lebanon	Laclede.

(Term expires July 20, 1915.)

1	E. L. Newlon	Lewistown	Lewis.
4	Chas. D. Bellows	Maryville	Nodaway.
7	N. H. Gentry	Sedalia	Pettis.
8	W. A. Dallmeyer	Jefferson City	Cole.
15	John Parker	Carthage	Jasper.

OFFICERS OF STATE FAIR DIRECTORY.

President—W. A. Dallmeyer, Jefferson City.
Vice-President—E. E. Swink, Farmington.
Secretary—John T. Stinson, Sedalia.
Treasurer—H. W. Meuschke, Sedalia.

EXECUTIVE COMMITTEE STATE FAIR DIRECTORY.

Is composed of sixteen corporate members of the State Board of Agriculture.

STATE VETERINARIAN AND DEPUTIES.

Name.	Address.
S. Sheldon, State Veterinarian	Columbia, Boone county.
Berry, W. F	Joplin, Jasper county.
Bradley, Horace	Windsor, Henry county.
Brainerd, E	Memphis, Scotland county.
Brown, L. D	Hamilton, Caldwell county.
Cahill, F. M., 224 South Seventh Street	St. Joseph, Buchanan county.
Chenoweth, John W	Albany, Gentry county.
Cissell, F. L	Perryville, Perry county.
Clark, L. G	Nevada, Vernon county.
Crites, D. E	Jackson, Cape Girardeau county.
Davis, B. C	Carrollton, Carroll county.
Donohew, A. C	Boonville, Cooper county.
Emonts, Joseph	O'Fallon, St. Charles county.
Gant, G. P	Lathrop, Clinton county.
Glover, A. D	Newark, Knox county.
George, J. W	Harrisonville, Cass county.
Grigsby, Paul S	Louisiana, Pike county.
James, A. W	Cameron, Clinton county.
Johnston, E. J	Excelsior Springs, Clay county.
Hendy, E. M	Jefferson City, Cole county.
Houser, W. J	Carthage, Jasper county.
Humphreys, John C	Chillicothe, Livingston county.
Kinsley, A. T., 1330-6 East Fifteenth	Kansas City, Jackson county.
Lash, O. U	Moberly, Randolph county.
Leach, G. H	Maryville, Nodaway county.
Leber, G. W	Pacific, Franklin county.
Lopp, W. J	Sedalia, Pettis county.
Love, R. B	Springfield, Greene county.
Luckey, D. F	Bloomfield, Stoddard county.
McConnell, H. M	Independence, Jackson county.
McElroy, J. H	Grant City, Worth county.
McLevey, J. H	Warrensburg, Johnson county.
McIntyre, George W	Mexico, Audrain county.
Maitland, E. P	LaPlata, Macon county.
Martin, W. E	Perry, Ralls county.
Miller, Boyd M	California, Moniteau county.
Morgan, D. B	Neosho, Newton county.
Munn, A. J	Fayette, Howard county.
Murphy, Olin T	Kahoka, Clark county.
O'Brien, F. W	Hannibal, Marion county.

Parker, W. A	Eureka, St. Louis county.
Parmenter, Glee	Harris, Sullivan county.
Peacock, E. E	Fairfax, Atchison county.
Pittman, August	Troy, Lincoln county.
Poage, R. P	Shelbina, Shelby county.
Riley, J. W	Wright City, Warren county.
Russell, Walter N	West Plains, Howell county.
Rutherford, F. W	Maysville, DeKalb county.
Scott, C. N	Mound City, Holt county.
Sebaugh, H. J	Farmington, St. Francois county.
Seiple, J. R	Poplar Bluff, Butler county.
Shikles, A. E	Dearborn, Platte county.
Shikles, W. C	Plattsburg, Clinton county.
Slater, J. H	Richmond, Ray county.
Smiley, T. M	Liberty, Clay county.
Smith, G. D	Lockwood, Dade county.
Smith, L. C	Hamilton, Caldwell county.
Smith, Stanley	Columbia, Boone county.
Sorber, W. C., 2223 Salisbury	St. Louis city.
Stuart, Oscar	Paris, Monroe county.
Starr, F. M	Odessa, Lafayette county.
Treadway, C. A	Canton, Lewis county.
Tuck, H. C	Morrisville, Polk county.
Utley, Harry C	Trenton, Grundy county.
Van Antwerp, A. E	Brookfield, Linn county.
Ward, E. B	Fulton, Callaway county.
Ward, H. C	Perry, Ralls county.
Welch, W. B	Marshall, Saline county.
White, T. E	Sedalia, Pettis county.
Wilson, R. J	Bolivar, Polk county.
Wolfe, F. A	Linneus, Linn county.
Woods, J. K	Huntsville, Randolph county.
Wiedmer, F. R	Savannah, Andrew county.

ASSOCIATE ORGANIZATIONS.

MISSOURI CORN GROWERS' ASSOCIATION.

President—George H. Sly, Rockport.
Secretary-Treasurer—T. R. Douglass, Columbia.
District Vice-President—Thomas Slawson, Rea.
District Vice-President—Alonzo White, Palmyra.
District Vice-President—E. L. Hughes, Glasgow.
District Vice-President—M. McCauley, Doniphan.
District Vice-President—Simon Baumgartner, Pierce City.

MISSOURI FARM MANAGEMENT ASSOCIATION.

President—J. Ed Hall, Lamonte.
Vice-President—I. N. Gartin, Darlington.
Secretary-Treasurer—R. S. Besse, Columbia.
Advisory Board—D. H. Doane, Columbia; F. B. Mumford, Columbia; W. P. Dysart, Columbia.

MISSOURI CATTLE, SWINE AND SHEEP FEEDERS' ASSOCIATION.

President—S. P. Houston, Malta Bend.
Vice-President—C. W. McAninch, Hughesville.
Vice-President—John A. Rankin, Tarkio.
Secretary-Treasurer—H. O. Allison, Columbia.

MISSOURI WOMEN FARMERS' CLUB.

President—Miss Pearle Mitchell, Rocheport.
Vice-President—Mrs. Rosa R. Ingels, Columbia.
Secretary—Miss Maude M. Griffith, Clinton.
Treasurer—Mrs. R. B. D. Simonson, Jefferson City.

MISSOURI HOME MAKERS' CONFERENCE.

President—Miss Alice Kinney, New Franklin.
First Vice-President—Mrs. J. Ed Hall, Lamonte.
Second Vice-President—Miss Louise Stanley, Columbia.
Secretary (corresponding)—Miss Nell Nesbitt, Columbia.
Secretary (recording)—Miss Pearle Mitchell, Rocheport.
Treasurer—Mrs. Cora Chapin, Appleton City.

MISSOURI ASSOCIATION OF COUNTY AND DISTRICT FAIR MANAGERS.

President—J. Allen Prewitt, Independence.
Vice-President—Jack Harrison, Auxvasse.
Treasurer—B. E. Hatton, Columbia.
Secretary—E. A. Trowbridge, Columbia.

MISSOURI STATE DAIRY ASSOCIATION.

President—Marshall Gordon, Columbia.
First Vice-President—C. W. Kent, Kansas City.
Second Vice-President—L. E. Cline, Columbia.
Secretary—P. M. Brandt, Columbia.
Treasurer—Rudolph Miller, Macon.

MISSOURI DRAFT HORSE BREEDERS' ASSOCIATION.

President—J. F. Roelofson, Maryville.
Vice-President—Dr. S. D. Henry, Excelsior Springs.
Secretary-Treasurer—E. A. Trowbridge, Columbia.

MISSOURI SADDLE HORSE BREEDERS' ASSOCIATION.

President—James A. Houchin, Jefferson City.
Vice-President—Paul Brown, St. Louis.
Secretary—Rufus Jackson, Mexico.
Treasurer—Wallace Estill, Estill.

MISSOURI COUNTRY LIFE CONFERENCE.

President—W. L. Nelson, Columbia.
Vice-President—Paul Culver, Gower.
Secretary—R. H. Emberson, Columbia.
Treasurer—M. F. Miller, Columbia.

MISSOURI SHEEP BREEDERS' AND FEEDERS' ASSOCIATION.

President—E. B. Wilson, Stanberry.
Vice-President—J. A. Foote, Oasis, southwest district.
Vice-President—Lyle Atkins, Denton, northeast district.
Vice-President—T. E. Atkins, Columbia.
Secretary-Treasurer—Howard Hackedorn, Columbia.

LETTER OF TRANSMITTAL.

State Board of Agriculture, Office of the Secretary,
Columbia, Mo., April 1, 1913.

To Honorable Elliott W. Major, Governor of Missouri:

Sir—I have the honor to transmit to you a report of the State Board of Agriculture for the year 1912, including the work of the State Veterinarian, State Highway Engineer, State Dairy Commissioner and State Apiary Inspector.

Very truly yours,

T. C. WILSON, Secretary.

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The Missouri State Board of Agriculture.

LAWS GOVERNING.

The following from the Revised Statutes of Missouri, 1909, article I, chapter 4, are in part the laws governing the Missouri State Board of Agriculture:

SEC. 596. *Board of agriculture established.*—A board of agriculture is hereby instituted and created a body corporate by the name and style of "The Missouri State Board of Agriculture," and by that name shall have perpetual succession, power to sue and be sued, complain and defend in all courts to make and use a common seal and alter the same at pleasure.

SEC. 597. *Members of board—appointment—qualifications—compensation.*—The governor, dean of the agricultural college and state superintendent of public schools shall be *ex officio* members of the state board of agriculture. The governor shall, within thirty days after the passage of this article, and thereafter as vacancies shall occur, appoint as members of said board one member from each congressional district, but said board shall be so constituted that not more than a majority shall belong to any one political party; and in making his appointments, the governor shall select, as far as practicable, members representing the different agricultural interests of the state. The members of the board shall serve without pay, excepting that necessary expenses incurred in attending meetings of the board be allowed.

SEC. 598. *Members divided into classes—terms of service.*—At the first meeting of the board appointed under this article, the corporate members shall be divided by lot into three groups; those falling in the first group shall hold office for one year from the date of said meeting; those in the second group shall hold office for two years from date of said meeting; those in the third group shall hold office for three years from date of said meeting and all vacancies thus created shall be filled for the term of three years.

SEC. 599. *Officers of board—compensation.*—The officers of the board shall be president, vice-president, secretary, assistant secretary and treasurer, who shall be elected by the corporate and *ex officio* members of the board at each annual meeting for the term of one year. The secretary shall be a practical farmer and well versed in agricultural science. The secretary and treasurer shall not be appointed members of the board. The secretary shall receive a salary of not more than twenty-five hundred dollars per annum. The treasurer shall receive a salary of not more than one hundred dollars per annum, and shall file with the secretary of state a bond equal to the amount of the biennial appropriation to the board of agriculture.

SEC. 601. *Duties of board.*—The state board of agriculture shall be and is hereby constituted the body which shall have supervision of all the legalized departments and institutions of the state which are for the advancement of agriculture. It shall as a body, or by a committee selected by the board be a board of examiners of the state agricultural and mechanical college and experiment station. While in no way limiting the power of the board of curators of the state university, the board of examiners shall, at least once in each year, carefully examine into the affairs of the college and experiment station, including the treasurer's account, in reference to the amount and sources of the income of the college and experiment station, and how expended, the qualifications of those engaged in teaching and those engaged in experimental work, and the character of the work done. The secretary of the board of agriculture shall be furnished with the information thus elicited, together with such recommendations as may be deemed necessary, for publication in the annual report of the board. The board of agriculture shall have charge of the veterinary service of the state, the appointment of the state veterinarian, and, with the advice of the veterinarian, of deputies, inspectors and other assistants. It shall be the duty of the board through its secretary, to gather crop and stock statistics, meteorological data and information as to the best and most profitable means of farming, stock-raising, fruit-growing, etc., and publish the same in bulletins as frequently as may be deemed expedient; to hold farmer's institutes in different parts of the state for the purpose of giving instruction in agriculture; to make an annual report to the general assembly of the state, embracing the proceedings of the board for the past year, and an abstract of the reports and proceedings of the several agricultural societies of the state, accompanied by such recommendations, including especially such a system of public instruction on these subjects, as may be deemed useful.

SEC. 604. *Printing and distribution of annual report.*—The public printer shall annually, under the direction of the secretary of the state board of agriculture, print as many copies of the annual report as may, in the judgment of the board, be required for distribution to the public libraries in the state, to the members of the general assembly, to local agricultural societies and farmers' institutes and elsewhere, and as may be authorized by the appropriation of the general assembly made therefor.

NEW MEMBERS BOARD OF AGRICULTURE.

In the forty-fourth annual report of this Board, brief sketches of the corporate and ex officio members and of the officers and employes of the Board were given. Since the publication of that report Missouri has elected a new Governor, who becomes an ex officio member of the State Board of Agriculture. Two changes have also been made in the corporate members of the Board. The following sketches, together with those published last year, give the Missouri farmers an opportunity to know something of the men who serve them.

Elliott W. Major (Democrat), Governor of Missouri.—Born in Lincoln county, Missouri, October 20, 1864. Educated in the public schools and at Watson Seminary. Was united in marriage with Miss Elizabeth Meyers in 1887. Has three children. Mr. Major studied law in the office of Hon. Champ Clark, and upon entering the practice of his profession soon became one of the best-known lawyers in his section of the State. He served as Senator from the Eleventh district, being elected in 1896. He was chosen a member of the commission revising the statutes in 1899. He was nominated for Attorney-General of Missouri on the Democratic ticket at the State primary, August 4, 1908, without opposition, and was elected at the following general election. As Attorney-General, he successfully prosecuted some of the most important cases in which the State has ever been interested. In 1912 he was named as a Democratic candidate for governor of Missouri and in November was elected by an overwhelming majority, his vote being especially heavy in the country districts. Governor Major is closely in touch with the farming interests of the State and owns two farms in Pike county.

C. D. Bellows.

Charles D. Bellows, Fourth district (Progressive Republican), Maryville, Nodaway county. — Born at Urbana, Ill., October 10, 1864, but has resided in Missouri since March, 1865. Educated in the schools of Nodaway county. On October 9, 1899, was united in marriage with Miss Emma Douglas. They have four children. Mr. Bellows was appointed a member of the Board of Agriculture in 1912. He has for many years been a breeder of Shorthorn cattle, his herd being one of the best known in the State.

John Parker.

John Parker, Fifteenth district (Republican), Carthage, R. F. D. No. 3.—Born in Knox county, Indiana, March 17, 1861. Came to Missouri in 1869 and was educated in the Missouri schools. Was married in 1906, his wife being Miss Lena May Sutton. They have three children. Mr. Parker served for two years as deputy sheriff of his county, and was for six years superintendent of the county farm, and for five years superintendent of the Jasper County Agricultural Experiment Station farm. With the exception of eight years his entire life has been spent in agricultural pursuits. He is at present engaged in general farming and also makes a specialty of Duroc-Jersey hogs. As superintendent of the Jasper County Experiment Station, Mr. Parker did much valuable work and carried on experiments which are of great value to the State.

Annual Meeting.

MINUTES OF PROCEEDINGS.

State Board of Agriculture, Office of the Secretary,
Columbia, Mo., December 19, 1912.

The Board met in the office of the Secretary at 10 o'clock a. m., and was called to order by President P. P. Lewis. The roll call showed members present as follows: Messrs. Evans, Mumford, Newlon, Brayton, Duncan, Bellows, Hedrick, Munson, Gentry, Dallmeyer, Householder, Lewis, Steinmesch, Wilkerson, Swink, Barnes and Nelson. Absent, Messrs. Smith and Hadley.

The minutes of all previous meetings for the year 1912 were read and on motion duly made and carried were approved.

President Lewis then explained at some length the reason for calling the meeting at this time because of the near approach of the convening of the Legislature and the importance of shaping up some very much needed legislation.

The President then announced the following committees:

Auditing Committee—Messrs. Newlon, Hedrick, and Wilkinson.

Agricultural College Committee—Messrs. Bellows, Munson and Swink.

Legislative Committee—Messrs. Wilkinson, Dallmeyer, Smith and Lewis.

The Board then took up the question of needed appropriations for the coming period and recommended the following:

Distribution of annual reports	$24,000.00
Monthly crop report and monthly bulletins	6,000.00
Office expense	1,000.00
Expense of members	5,000.00
Farmers Institutes	22,500.00
State Veterinary	50,000.00
Highway Engineer	25,000.00
Apiary inspection	2,000.00
Secretary's salary	6,000.00
Assistant secretary's salary	5,000.00
Clerk hire	3,000.00
Total	$149,500.00

The Secretary then called attention of the board to the fact that Miss Alice Kinney of Franklin, Mo., President of the Missouri Home Makers' Conference Association, and Mrs. C. W. Greene, State chairman of Home Economics of Missouri, were in waiting in another room and asked that the Board give them a few moments to present a proposition to encourage girls on the farm. The request was granted and Miss Kinney presented the case in a very forceful and appealing way. The Board unanimously approved her proposition and on motion of Messrs. Bellows and Mumford, $25.00 was appropriated from the farmers' institute fund to be applied on a scholarship for the young woman who was awarded the prize in the tomato growing contest, which $25, together with a similar amount appropriated by the Missouri Home Makers' Conference Association, shall pay for the attendance of the successful contestant in the short course in the school of home economics of the University of Missouri.

Dr. Cutler, State Food and Dairy Commissioner, presented his report and made explanation of several features, after which, on motion of Mr. Steinmesch, the report was received and ordered printed in the annual report.

Mr. Curtis Hill presented his report showing the work accomplished by the Highway Engineer's Department, and on motion duly made and carried the report was received and ordered printed in the annual report.

Mr. M. E. Darby, Apiary Inspector, mailed his report to the Secretary, which was presented to the Board, received and ordered printed in the annual report.

Dr. Sheldon stated that his annual report was not quite ready to come before the Board and asked leave to present his report in January, which request was granted. He then recommended that the Board ask the enactment of a law regulating the importation into Missouri of cattle, horses, sheep and swine, requiring such certificate of good health as may be deemed proper and necessary for the protection of the Missouri farmers against diseased animals. On motion Dr. Sheldon was authorized to prepare a bill covering his recommendation to be presented to the Board at its January meeting.

Judge W. R. Wilkinson being the ranking member of the Board in point of service, having been longer on the Board than any other man now a member, asked permission to present the following resolution:

Whereas, H. J. Waters, former president of the Missouri State Board of Agriculture, former dean of the Missouri College of Agriculture and director of the Missouri Experiment Station, and now president of the Kansas Agricultural College, is being mentioned as a successor to Honorable James Wilson, National Secretary of Agriculture, and

Whereas, The Secretary of Agriculture should, we believe, be a man thoroughly familiar with general farming, especially as conducted in the great Mississippi Valley states which constitute the real agricultural field of the nation, and should further be a recognized authority on questions relating to live stock breeding and feeding—Americans being meat eaters, and the meat supply problem one of nation-wide interest; therefore, be it

Resolved, That we, the members of the Missouri State Board of Agriculture, in annual meeting assembled, recognizing the marked ability of President Waters, his peculiar fitness and eminent qualifications, the result of actual farm experience and years of study, his honesty and integrity, his sympathy with the cause of agriculture in all its phases, his unusual capacity for leadership, his breadth of vision and his unselfishness in the cause he so splendidly serves, do urge his appointment as Secretary of Agriculture in the cabinet of President Woodrow Wilson.

Dean Mumford immediately moved the adoption of the resolution. This motion was seconded by every member of the Board and was passed unanimously.

Messrs. Gentry and Swink then moved that the Legislature be asked to appropriate liberally for the purpose of representing the State of Missouri at the Panama Exposition to be held in San Francisco in 1915.

ELECTION OF OFFICERS.

The board then took up the election of officers and on motion of Judge Wilkinson the rules were suspended and Mr. P. P. Lewis was unanimously elected President for the ensuing year.

On motion of Mr. Swink and Mr. Nelson, the rules were suspended and Mr. W. R. Wilkinson was unanimously elected as Vice-President for the ensuing year.

On motion the rules were suspended and Mr. T. C. Wilson was elected Secretary for the ensuing year.

On motion of Judge Wilkinson the rules were suspended and Mr. W. L. Nelson was elected Assistant Secretary for the ensuing year.

On motion of Judge Swink the rules were suspended and Mr. W. A. Bright was elected Treasurer for the ensuing year.

Mr. Bright then presented his report showing the financial transactions of the year, which report was received and referred to the Auditing Committee.

The Secretary then presented his financial report, which was received and referred to the Auditing Committee.

The Board then took up and discussed the various laws of particular interest to the farmers of the State, and on motion of Dean Mumford, a committee was appointed to prepare a resolution asking the Legislature to enact a commercial feed law, a pure seed law, and a stallion law. Messrs. Steinmesch, Swink and Bellows were appointed on this committee.

The resignation of Dr. Arthur J. Hammerstein as Deputy State Veterinarian was then presented to the Board and was accepted.

The Secretary then read a letter received from Dr. T. A. Shipley of St. Joseph, which letter had been written by Mr. L. E. Cooper, asking permission to remove hogs from the St. Joseph stockyards under certain conditions. This question was very thoroughly discussed and Dr. Sheldon was authorized to visit various places and diligently inquire into the success of the treatment of hogs in the stockyards to render them immune from hog cholera so that they may be shipped to feeding lots and fed for slaughter.

The Secretary then read a letter from Mr. J. B. Dillingham of Platte City, Mo., offering to supply sufficient bond to indemnify neighbors from loss and asking that a permit be given to take hogs from the stockyards to his pasture for feeding. On motion of Messrs. Duncan and Wilkinson, this request was laid on the table pending the report of Dr. Sheldon on the above investigation.

The Board then adjourned to meet in Jefferson City, January 13, 1913, at 10 a. m.

T. C. WILSON, Secretary.

MINUTES OF ADJOURNED MEETING.

Secretary's Office, Columbia, Mo.,
January 14, 1913, 2 o'clock p. m.

Meeting called to order by President Lewis. On call of roll those present were Messrs. Lewis, Wilkinson, Dallmeyer, Nelson, Barnes, Steinmesch, Gentry, Parker, Evans, Munson, Bellows, Mumford, Newlon, Brayton and Hedrick. Absent, Governor Major and Messrs. Duncan, Householder and Swink.

The committee to examine the financial reports of the Secretary and Treasurer submitted the following report:

REPORT OF THE AUDITING COMMITTEE.

The Auditing Committee reported as follows:

To the Board of Agriculture: We, the undersigned members of the committee appointed by the President to examine the financial statement of the Secretary and Treasurer, and to inspect the warrants drawn by the Executive Committee, have examined the same and find that the books of the Secretary agree with the financial statement submitted, and the same agrees with the report of the Treasurer of the Board.

The following warrants, which had been issued at the last annual statement, but had not been presented for payment, we find have since been paid:

MONTHLY CROP REPORT.	
No. 624	$25.04
No. 625	10.50
No. 626	1.65
No. 628	43.75
FARMERS' INSTITUTE.	
No. 1388	$25.00
No. 1391	200.00
No. 1395	22.25
No. 1399	13.87
No. 1400	150.47
STATE VETERINARY FUND.	
No. 2773	$2.64
No. 2775	62.71
No. 2776	194.91
APIARY INSPECTION.	
No. 37	$7.90
STATE HIGHWAY ENGINEER FUND.	
No. 416	$5.25

The following warrants, for which corresponding vouchers are on file with the Secretary, have not been presented to the Treasurer for payment:

FARMERS' INSTITUTE.	
No. 1546	$14.75
No. 1551	185.94
No. 1555	29.35
STATE VETERINARY FUND.	
No. 2938	$45.17
No. 2940	107.19
No. 2941	231.34
No. 2943	234.95
No. 2944	176.77
No. 2945	50.00
No. 2947	221.75
No. 2948	258.91
No. 2949	89.40
No. 2950	27.50
No. 2951	10.00
No. 2952	250.31
No. 2953	13.50
No. 2954	33.57
STATE HIGHWAY ENGINEER FUND.	
No. 345	$12.08
No. 491	251.30
No. 498	287.17
No. 499	25.00
No. 500	210.79

STATE HIGHWAY ENGINEER FUND—Continued.

No. 501	$263.44
No. 502	25.00
No. 503	173.44
No. 507	20.00
No. 508	279.41
No. 509	171.26
No. 510	25.00
No. 511	169.46
No. 512	307.46
No. 513	78.00
No. 514	25.00

When these warrants have been presented to and paid by the Treasurer there will be an exact agreement in balances.

Respectfully submitted,
E. L. NEWLON,
T. J. HEDRICK,
W. R. WILKINSON,
Committee.

On motion duly made and carried the report was approved.

The committee on the Agricultural College then made the following report, which, on motion of Mr. Munson, supported by Mr. Barnes, was approved and ordered printed in the annual report.

REPORT OF COMMITTEE ON COLLEGE OF AGRICULTURE.

Your committee appointed to examine into the work of the State College of Agriculture and Experiment Station, report that we have made such examination and find these institutions well managed and working efficiently for the best interests of Missouri agriculture. Your committee is particularly gratified to find a continued increase in the number of students enrolled in the College of Agriculture. The enrollment has increased 350 per cent in six years. This very great increase in the enrollment has taxed the instructional facilities and crowded the class rooms and laboratories to a point where additional buildings and equipment must be provided, if the quality of the instruction is to be maintained.

The new departments recently organized gave shown great progress. We find the department of poultry husbandry well equipped to give first-class instruction in this branch. The forestry department has been well organized and twenty-five students are now enrolled in this course. We particularly commend the new course in agriculture and home economic for women. In our judgment, the same opportunity for instruction should be provided for women as for men. This is the first course of the kind in the United States and has attracted wide attention.

The new building for agricultural chemistry will soon be completed. The veterinary building and new dairy barn have been fully equipped and occupied during the year.

Your committee desires to place upon record some of the achievements of the College of Agriculture during the past year, and have therefore prepared the following report, which considers somewhat in detail some of the important activities of the College of Agriculture.

Missouri has the smallest investment in animals for instructional purposes and the smallest investment in buildings for live stock judging of any agricultural college in the middle west. The following figures show the amounts of money invested in these items in nearby states.

Investment in animals for instruction of students—Iowa, $59,000; Kansas, $29,625; Wisconsin, $28,158; New York, $26,192; Ohio, $18,250; Illinois, (dairy cattle not included), $14,670; Missouri, (dairy cattle not included), $7,109.

Value of buildings for live stock judging—Illinois, $80,000; Wisconsin, $73,000; Indiana, $30,000; Iowa, $25,000; Ohio, $20,000; New York, $15,000; Kansas, $9,000; Missouri, $4,000.

INSTRUCTION GIVEN BY COLLEGE OF AGRICULTURE.

The College of Agriculture gave systematic instruction to 2,808 different men and women during the past year. These men represent every county in Missouri, more than half of the states and many foreign countries. The plan of instruction is indicated below:

Four-year college course for men—Number of students in 1903-04, 75; number of students in 1911-12, 417; number of graduates in 1905, 2; number of graduates in 1912, 67.

Four-year course in agriculture and home economics for women—Organized in 1911-12; enrollment, 25. Forestry course—Organized in 1911-12; number of students, 25.

Students in graduate department—Open only to college graduates. Number of students in 1911-12, 32.

Two-year winter course (short course)—For men over 16 years of age. Number of students in 1903, 48; number of students in 1912, 292.

Winter dairy short course—A special course for dairy and creamery operators begins first week in January.

Short winter course for women—For women over 16 years of age. The course begins January 6. Number of students in 1912, 14.

Farmers' short course—Five special short courses for farmers. Subjects, soils and farm crops, animal husbandry, dairy husbandry, horticulture and poultry husbandry. Number of students enrolled in 1912, 1,300.

Short course in agriculture for boys—For boys under 16 years of age. Given during farmers' short course. Number enrolled in 1912, 15.

Agriculture in the summer school—Courses in agriculture for teachers and students. Number of students in 1911, 69.

Branch short courses—Given in nine localities. Number of students enrolled in 1911-12, 645.

WORK AND RESULTS OF AGRICULTURAL EXPERIMENT STATION.

The Agricultural Experiment Station is organized to investigate agricultural problems and publish results in the form of bulletins which are sent free to farmers.

Investigations are continually in progress on soils and farm crops, feeding and breeding live stock, dairy husbandry, horticulture, farm management, poultry husbandry, agricultural chemistry, veterinary science, and botany and zoology.

Results of Experiment Station Investigations.—The Agricultural Experiment Station in 1911 added $500,000 directly to the wealth of Missouri through its distribution of hog cholera serum. The application of $4.20 worth of fertilizer has brought an average return of $14.54 on Northeast Missouri rolling prairie lands. Clover forage fed hogs has yielded an average of $34.11 per acre with pork at six cents a pound. Spraying has increased the income from apple orchards $125 per acre. The results of all these investigations are published in bulletin form. The bulletins are free to Missouri farmers.

Publications.—The Agricultural Experiment Station is required by federal law to publish bulletins giving the results of experiments conducted and supplying agricultural information to the farmers of the State. The Missouri Experiment Station has published 165 bulletins and circulars of information on agricultural subjects. During the year ending June 30, 1912, twenty-five bulletins and circulars were issued. The bulletins contained 2,888,500 pages. These publications were sent to farmers and citizens in every section of Missouri. All publications are sent free upon request as long as the supply is available. The following publications have been issued during the year:

Bulletin No. 97—Co-operation Among Fruit Growers.
Bulletin No. 98—The San Jose Scale in Missouri.
Bulletin No. 99—Inspection of Commercial Fertilizer.
Bulletin No. 100—Influence of Fatness of Cow at Parturition upon per cent of Fat in Milk.
Bulletin No. 101—Report of the Director for the Year Ending June 30, 1912.
Bulletin No. 102—Combating Orchard and Garden Enemies.
Bulletin No. 103—The Silo for Missouri Farmers.
Bulletin No. 104—The Evergreen Bagworm.
Circular No. 48—The Gurler or Plastered Silo.
Circular No. 49—The Reinforced Concrete Silo.
Circular No. 50—Selection of Corn for Seed and Show.
Circular No. 51—How to Prolong the Life of Fence Posts.
Circular No. 52—Growing a Woodlot from Seed.
Circular No. 53—The Seeding of Cowpeas.
Circular No. 54—Co-operative Experiments of the Department of Agronomy.
Circular No. 55—Forage Crops for Swine.
Miscellaneous—
  Index to Bulletins Nos. 83-96.
  Soil Survey of Cedar County.
  Soil Survey of Atchison County.
Research Bulletins—
  No. 4—Digestion Trial with Two Jersey Cows on Full Ration and on Maintenance.
  No. 5—Maintenance Trials with Five Jersey Cows.

Reprints of Circulars—
- No. 40—The Seeding of Alfalfa.
- No. 42—The Seeding of Clover and Grasses.
- No. 47—Raising Calves on Skim Milk.
- No. 48—The Plastered or Gurler Silo.

Saving Missouri Hogs.—The College of Agriculture inoculated 70,000 hogs during the past year. Eighty-five per cent of these hogs were saved. At a conservative estimate, the work of the college has added $1,000,000 in cash to the resources of Missouri in this item alone in one year.

Protecting Farmers in the Use of Fertilizers.—The Agricultural Experiment Station maintains a thorough inspection service of commercial fertilizers in order to protect the farmers of Missouri in the use of these materials. All fertilizers must be registered with the Experiment Station, giving a complete and careful guarantee of the amount of plant food present in the fertilizer. The Experiment Station through its inspectors collects these brands of fertilizers from dealers, from the farmers' wagons or in the manufacturers' warehouses. These samples are analyzed and the results published. In this work the Experiment Station has collected 900 samples in 130 localities, and has made 1,600 analyses.

Seed Testing Laboratory.—The College of Agriculture in co-operation with the United States Department of Agriculture maintains a free seed testing laboratory. Any farmer or seedsman in the State of Missouri may send samples of seed to the College and have them tested free of charge. Many farm seeds are adulterated with noxious weed seeds. In some cases 30 per cent of the samples tested have been found to be weed seeds. A prompt report to the farmer or seedsman on these samples prevents the dissemination of serious weed pests. There is no Missouri law now covering the examination of seeds and providing for the enforcement of regulations which will prevent the dissemination of noxious weed seeds. We therefore recommend that a law be enacted giving the Experiment Station the necessary authority to enforce such regulations as will prevent the wholesale distribution of dangerous weed seeds in Missouri.

Judging Live Stock at County Fairs.—The Agricultural College supplied 42 county fairs with expert judges of live stock in 1911. These expert judges were trained for this work by the animal husbandry department. It required 183 days and the services of 14 men to supply this demand for judges. The total number of animals examined and placed for the award of prizes was 6,000. There were 605,000 people attending these fairs.

Judging Corn at 61 Missouri Fairs.—Men from the department of agronomy in 1910-11 attended 61 agricultural fairs and corn shows for the purpose of giving instruction in breeding, selecting and harvesting seed corn, and acting as expert judges at these shows. The accomplishment of this task required the services of five men from the College of Agriculture for a total of 68 days.

Branch Short Courses in Agriculture.—A new project recently inaugurated by the College of Agriculture is the establishment of five-day short courses, located in various sections of the State. These branch short courses are planned to give the largest amount of practical instruction in live stock farming, soils, farm crops, dairy farming, fruit growing and poultry farming during a period of one week. This instruction is given under the direction of two competent teachers from the College of Agriculture who devote their entire time to lectures and demonstrations. In 1912, 100 applications were received for the location of branch short courses. Only nine could be organized. There were 648 regularly enrolled students who took the five days work in these courses.

Instruction for Farmers.—The College of Agriculture does not confine the benefits of its instruction to those students only who are permitted to enroll in the regular courses at Columbia. In many ways the college is carrying the results of its practical experiments directly to the people of the State.

The Farmers' Short Course.—The College of Agriculture offers five distinct short courses in soils and farm crops, horticulture, live stock farming, poultry husbandry, and dairy husbandry during Farmer's Week at Columbia. In 1913, 1,300 farmers enrolled for systematic instruction in these courses. Nine states were represented in this enrollement. In the winter of 1913, the short courses will begin January 13, and continue for five days, closing with the farmers' banquet on Friday night, January 17, 1913.

Teaching Agriculture to Teachers.—Each summer, from June to August, in the summer session, instructors in the College of Agriculture give special courses to teachers with a view to preparing them to teach agriculture in the rural and high schools of Missouri. More than 150 teachers were enrolled in the agricultural courses in 1912.

Farmers' Institute.—In co-operation with the State Board of Agriculture, men from the College of Agriculture have delivered 396 addresses at farmers' institutes and other public meetings.

Farm Advisers for Missouri Counties.—One of the most important projects inaugurated by the College of Agriculture is the appointment of farm advisers for Missouri counties. The College of Agriculture in co-operation with the United States Department of Agriculture has provided for the appointment of a farm adviser in each county who shall act as the representative of the College of Agriculture. The duties of the farm adviser will be to bring to the farmer on his own farm the benefits of the investigations conducted at the Experiment Station. The Agricultural College Committee gives its unqualified approval to this plan, and urges every member of the Board of Agriculture to co-operate with the college in the further extension of this important project.

Co-operative Experiments with Farmers.—In 1910 there were 366 men in 105 counties co-operating with the central Experiment Station at Columbia in experiments to determine the best methods of farming. In carrying forward this work, 3,000 different packages of seeds were used and more than 20,000 pounds of fertilizer. These experiments have already demonstrated that alfalfa can be successfully grown in every county of the State and that the best varieties of corn for Missouri are Boone County White, Reid's Yellow Dent, Johnson County White and St. Charles White.

Outlying Experiment Fields.—The Agricultural Experiment Station is carrying on investigations in 21 localities, representing the different soil types of Missouri. This work is a part of the great agricultural soil survey of the State. These investigations are demonstrating profitable methods of agriculture for each locality. In Christian county corn yields have been increased 16½ bushels per acre, and clover one and three-fourths tons by the application of results discovered on the Billings experiment field. On the Lamar experiment field in Southwest Missouri it has been shown that corn may be increased from twenty to forty-five bushels per acre. On the same field wheat was increased twelve bushels per acre. Soil experiments on the experiment field in Northeast Missouri have increased the yield of wheat by fifteen bushels per acre, with a corresponding increase in the net profit.

Soil Survey.—The Agricultural Experiment Station, in co-operation with the United States Department of Agriculture, has organized and is now conducting a thorough and complete agricultural survey of Missouri. The Experiment Station has completed the survey of Atchison, Bates, Carroll, Cape Girardeau, Cass, Cedar, Cooper, Crawford, Franklin, Howell, Jackson, Laclede, Lincoln, Macon, Marion, Miller, Pemiscot, Pike, Platte, Putnam, Saline, Scotland, Shelby, Stoddard, St. Charles, St. Louis and Webster counties.

Boys' Corn Growing Contest.—In 1912 there were 2,500 Missouri boys and young men enrolled in a corn growing contest under the direction of the College of Agriculture in co-operation with the Missouri Corn Growers' Association. Full directions for selecting seed, for testing the vitality of the seed corn, for preparing the ground, planting, cultivating and harvesting the corn are furnished these boys by the College of Agriculture. A record book is also furnished each contestant in which he can keep an accurate record of his work, and can determine the cost and net profit made in growing his corn. When the crop is harvested the corn is exhibited at county corn shows and judged by men from the College of Agriculture. At these meetings the boys are given valuable instruction in corn growing.

Correspondence.—In one year's time men in the College of Agriculture have received and answered 52,407 letters and post cards. In most cases personal replies have been made to definite questions relating to agricultural practice. The correspondence of men in the College of Agriculture has increased 30 per cent during the past twelve months.

The Traveling Dairy Instructor.—The College of Agriculture is helping in the development of the dairy industry of the State. It maintains a traveling dairy instructor whose whole time is devoted to organizing and instructing dairy associations and individual dairy farmers in Missouri.

The Organization of New Departments.—The College of Agriculture now offers instruction in every important phase of agricultural activity in Missouri. Three new departments have been recently added: Farm management, forestry and poultry husbandry.

THE NEEDS OF THE COLLEGE.

The demand upon the College of Agriculture for instructional work at Columbia, for investigational work in the Experiment Station, and for various kinds of services to the farmers of Missouri, require additional equipment, more teachers and a general increase in material equipment of the College of Agriculture. The most pressing and important needs of the institution in the judgment of your committee are the following:

A Live Stock Judging Pavilion.—More than six hundred students are now enrolled in live stock judging. No adequate room is available for this work. The small pavilion now used for this purpose is wholly inadequate. The live stock equipment available for instruction in animal husbandry is very meager. We urge the Legislature to appropriate more money for the purchase of purebred live stock.

The branch short courses in agriculture, inaugurated last year for the first time, have been remarkably successful. The college has no specific appropriation for this purpose. We ask the Legislature to make a special appropriation for branch short courses in agriculture.

We commend the new project for the appointment of farm advisers for Missouri counties. In our judgment this will make it possible for the college to bring to the farmer on his own farm the benefits of the investigations conducted at the Agricultural Experiment Station. In our judgment the counties should pay at least half of the cost of the farm advisers, but the Legislature should appropriate sufficient money so that the college can pay a part of the cost of administration and salaries of the farm advisers.

After careful consideration of the needs of the college, and investigating the projects already established, we recommend that the Legislature provide the following sums for the purpose of carrying forward the work of the College of Agriculture for the next biennial period:

Soil survey, $15,000; outlying experiment fields, $20,000; branch short courses in agriculture, $15,000; farm advisers for Missouri counties, $25,000; orchard demonstrations, $5,000; Experiment Station, $30,000; equipment of agricultural laboratories, $10,000; books for agricultural library, $4,000; department of animal husbandry, $15,000; department of dairy husbandry, $5,000; department of farm engineering, $5,000; purchase of pure bred live stock, $12,000; graduate school of agriculture, $2,000; live stock judging pavilion, $25,000; greenhouse for agronomy and horticulture, $3,500; remodeling horse and sheep barns, $4,000; Experiment Station feeding barn, $5,000; expenses of lectures to corn shows and agricultural meetings, $10,000.

In addition to the above, the College of Agriculture needs four hundred acres of land, an increase in the number of instructors in agricultural subjects and a new cattle barn.

We again express gratification at the friendly spirit of co-operation existing between the State Board of Agriculture and the College of Agriculture. This co-operation by these two important agencies has resulted in greater efficiency and economy in the development of the work of agricultural betterment in this State.

In conclusion we commend the College of Agriculture for economy of administration, the efficiency of its instruction and particularly upon the conscientious effort to bring to Missouri farmers the benefits of its investigations.

Respectfully submitted,
CHAS. D. BELLOWS,
FRED T. MUNSON.

On motion, permission was given to the College of Agriculture to print the report in full for circulation.

The Secretary then read his report for the year of 1912, and, on motion of Mr. Dallmeyer, supported by Mr. Barnes, the report was received and ordered printed in the annual report.

Dr. Sheldon, State Veterinarian, presented his report for 1912, and, on motion of Mr. Mumford and Mr. Brayton, the report was received and filed.

Dr. Sheldon then presented his list of deputy veterinarians to serve for one year, and, on motion of Messrs. Barnes and Hedrick, the list was approved.

After some discussion on the hog cholera disease, Dean Mumford moved that Dr. Sheldon and Dr. Connaway be instructed to prepare and submit some plan of co-operation between the College of Agriculture and the State Board of Agriculture in the control of the hog cholera situation, and a committee be appointed to hear the recommendations and to act for the Board. The motion was supported by Mr. Lewis and carried. Messrs. Dallmeyer, Bellows, Gentry, Hedrick, Mumford and Lewis were appointed as the committee.

The Board adjourned to meet at the Elks' club rooms at 8 o'clock p. m.

Meeting at Elks' club rooms called to order by President Lewis. After discussing the proposition to raise the salary of Mr. J. Kelly Wright as institute lecturer, and a thorough inquiry into the work being done by Mr. Wright, Judge Wilkinson moved to employ Mr. Wright for the year 1913 at a salary of $2,200.00. The motion was seconded by Mr. Brayton and carried.

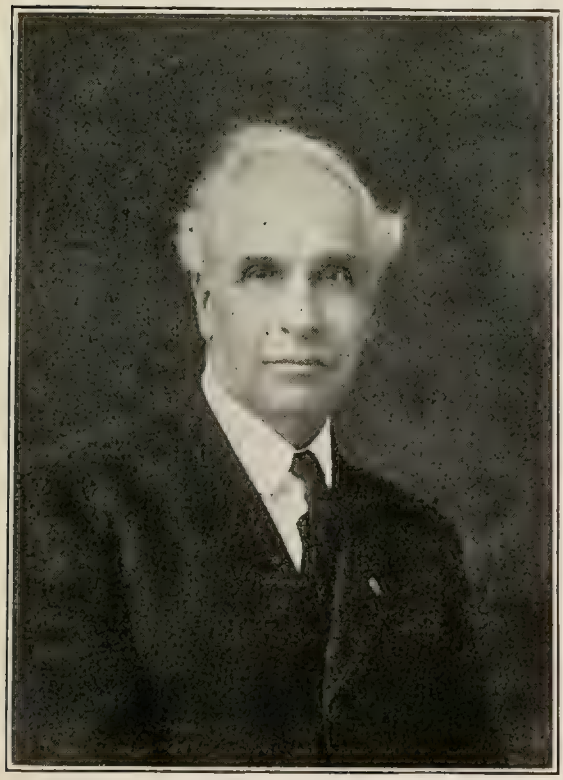
On motion of Mr. Dallmeyer, supported by Mr. Munson, Dr. W. P. Cutler was elected Dairy Commissioner at such salary as the Legislature may provide.

The Board adjourned.

T. C. WILSON, Secretary.

REPORT OF SECRETARY.

Gentlemen of the Board of Agriculture:



T. C. Wilson.

On this occasion, your annual meeting, it has been the custom for your Secretary to make report showing in brief what the Board has accomplish during the year, and to suggest in what way the great agricultural interests may be benefited.

Our Legislature—the great assembly of lawmakers—is just beginning the biennial session, and you now have your only opportunity to secure the enactment of desired legislation during the next two years.

At your last annual meeting your Secretary suggested several laws for your consideration, and it may be well to refer to them again. They are: county fairs, Hahatonka purchase, pure seed law, and statistical law.

The proposition for the State to purchase the Hahatonka tract in Camden county for a State park has already received your endorsement and need not be further considered at this time.

The question of State aid to county fairs will no doubt be presented to the Legislature during this session, and the great importance of improving the character of the exhibits and stimulating the educational feature of the county fair would call for careful consideration of this proposed enactment.

A pure seed law was also suggested for your action and the need of such a law is growing more imperative. This office, acting under authority of your legislative committee, collected a large amount of data from other states and was ready to draft a bill for consideration by the Board when we learned that such a bill has been prepared by the College of Agriculture. I hope that a bill regulating the sale and distribution of seeds may be placed upon our statutes at this session.

Statistical Law.—Two years ago we presented to the Legislature, then in session, a bill providing for collecting, compiling and publishing farm statistics. This bill might have become a law at that time but for the fire which destroyed the capitol building. We are called upon almost daily to answer questions from out of the State by persons thinking of coming to Missouri and wanting information we cannot give. We should be able to tell definitely the acres in cultivation in each crop, the yield per acre, the number and value of all animals in each county and a great many other facts the inquirer may want to know.

Premiums.—One of the first acts of the Board of Agriculture was the appropriation of money for premiums, and this was nearly fifty years ago. The Board arranged for competitive exhibitions of various farm implements where their efficiency was demonstrated and prizes awarded. This Board greatly encouraged the adoption of new and improved machinery by such means. The cash premiums you have given in our corn shows have made the corn growers' organization a success. The $200 you set aside for the corn trophy that is so much admired and so earnestly sought for will likely form the chief object in that corn contest for several years. Last March you appropriated $100 to encourage the home-curing of meat and we will soon have our first contest for the prizes thus provided. Many samples of ham and bacon will be on exhibition in the Agricultural building during Farmers' Week. I hope you will make this contest an annual feature for Farmers' Week.

You have more recently appropriated $25 to aid the Home Makers' Conference in giving a short course scholarship in the domestic science department here, this scholarship to go to the winner in a tomato-growing contest. It will be greatly appreciated by members of the Home Makers' Conference if this appropriation can be continued so long as the ladies appropriate a like amount.

Country Life Conference.—Suggestion was made in my last report that a country life conference be held here during our Farmers' Week, and as the suggestion met with your approval, we have arranged for such a meeting. A special program has been printed for these meetings and we have secured speakers of renown in their special lines. We hope to effect a State organization to be known as the Missouri Rural Life Conference Association to hold its meetings each year on Farmers' Week.

Farmers' Institutes.—The farmers' institute meetings have been held this year under the new order adopted by the Board at your last meeting. As was to be expected the new method has brought some disappointments and failure to meet the requirements. Yet it is gratifying to note the people generally are willing to adapt themselves to the new arrangement and little or no friction is anticipated next year. During 1912 we held 246 meetings with 463 sessions, occupying 308 days and occurring in 76 counties. This does not include the special train service on the various railroads.

There is great need of a special organizer who can assist in the institute meetings and at the same time direct the attention of farmers to the importance of organization. We want a man who can impress his hearers and convince them of the necessity for organization and who can effect such organization before leaving the community. Such a man at this time would be a valuable asset of the Board.

Last October I was authorized by the members of this Board to secure the services of Miss Nelle Nesbitt at a stated salary to carry on the institute work for women, and to prepare circulars and bulletins relating to the woman's work. Miss Nesbitt has been with the Board only a few weeks, but her work has already begun to show good results and I believe the Board and the people will be well pleased at the end of the year.

Publications.—During the year 1912, we have printed 12,500 copies of the forty-fourth annual report, a book of about 500 pages, and have been unable to supply half the demand. Many county school superintendents ask for 100 or more copies as they wish to place one copy in each school, but we have never been able to send more than forty copies to any one for distribution because of our limited appropriations. We also issued the usual complement of the monthly bulletins as follows:

Vol. 10, No. 2, January—Growing Cowpeas in Missouri, 8,000.
Vol. 10, No. 2, February—The Hydraulic Ram, 8,000.
Vol. 10, No. 3, March—Construction of County Roads, 10,000.
Vol. 10, No. 4, April—Missouri Home Makers' Conference Association, 1912, 3,000.
Vol. 10, No. 5, May—Effect of Country Roads, 10,000.
Vol. 10, No. 6, June—Missouri County Fairs, 10,000.
Vol. 10, No. 7, July—Smuts of Cereals and the More Important Insect Pests of Grain Crops, 3,000.
Vol. 10, No. 8, Selection and Care of Seed Corn, 3,000.
Vol. 10, No. 9, Potato Growing in Missouri (Orrick District) 10,000.
Vol. 10, No. 10, Diversified Crops in Missouri, 12,000.
Vol. 10, No. 11, Bovine Tuberculosis, 12,000.
Vol 10, No. 12, Crop Review for 1912, 10,000.

These bulletins are sent free to those whose names are on our mailing list, to the libraries and to those who make special request for them. In collecting data for these bulletins we endeavor to select subjects of general interest to all farmers and then treat each subject from the farmers' viewpoint rather than that of the scientist.

The tremendous loss occasioned by the hog cholera disease is concentrating public attention on the disease, its cause and prevention. The prevailing high prices at the markets and the rapid and deadly work of the disease have produced a panicky feeling among hog raisers and they are ready and willing to take up any remedy that carries ever so small a promise for relief. The faker can sell his quack nostrums almost as readily as can the trained veterinarian his most approved serums. This condition has become so alarming that there is urgent need for legislative action. There should be more rigid enforcement of our quarantine and sanitary laws, and I believe these laws should be strengthened and made more effective. All dead cholera hogs should be burned, not buried, as the law now permits. Then we should have the power to compel owners of diseased herds to practice strict sanitation and quarantine. I believe we also need a law regulating the manufacture and sale of hog cholera serum by the license system or some more effective way in order that the owner or hog raiser may be sure of what he is getting when he buys the preventive.

T. C. Wilson, Secretary.

SECRETARY'S FINANCIAL STATEMENT.

To the Board of Agriculture:

I beg to submit the following exhibit of the financial transactions of the Board for the year beginning January 8, 1912, and ending January 11, 1913, which shows the balances on hand at the beginning of the year, the requisitions drawn on State Auditor, warrants drawn on W. A. Bright, Treasurer of the Board, balances in the treasury of the Board, and the balances in the different funds remaining in the State Treasury:

DISTRIBUTION OF ANNUAL REPORTS.

Date.	Name.	War. No.	Dr.	Cr.
1912.				
Jan. 8	To balance on hand		$611.83	
" 8	By American Express	216		$1.51
" 8	J. W. Peach	217		1.50
" 8	E. A. Remley	218		50.00
ar. 2	Teachenor-Bartberger Eng. Co	219		20.75
" 2	Wells Fargo & Co., express	220		5.66
pr. 29	W. C. Hutchison	221		1.50
uly 31	To requisition		500.00	
ug. 10	By The Statesman Publishing Co	222		8.75
ept. 2	American Express Co	223		167.55
" 2	M., K. & T. Railway Co	224		42.04
" 2	Kintaro Horii	225		6.60
" 11	23 Transfer Co	226		13.00
" 11	Wells Fargo & Co., express	227		49.19
" 20	Libby & Williams Paper Co	228		11.60
" 30	M., K. & T. Railway Co	229		42.35
" 30	Wells Fargo & Co., express	230		121.70
" 30	E. A. Remley	231		150.00
" 30	J. N. Mitchell	232		74.40
" 30	American Express Co	233		7.18
" 30	23 Transfer Co	234		9.50
Oct. 22	Hugh Stephens Printing Co	235		16.00
" 22	Barnes-Crosby Co	236		1.25
" 25	Barnes-Crosby Co	237		30.00
" 30	University Co-operative Store	238		2.25
" 30	E. A. Remley	239		150.00
" 30	Libby & Williams Paper Co	240		3.80
" 30	J. N. Mitchell	241		28.30
Dec. 20	To requisition		241.95	
Jan. 11	By balance			337.40
	Totals		$1,353.78	$1,353.78

MONTHLY CROP REPORT.

Date.	Name.	War. No.	Dr.	Cr.
1912.				
Jan. 8	To balance on hand		$531.86	
" 8	By The Statesman Publishing Co	630		$4.50
" 8	E. A. Remley	631		10.10
" 26	Teachenor-Bartberger Eng. Co	632		18.25
Feb. 1	E. A. Remley	633		2.75
" 1	W. A. Bright	634		20.00
" 20	E. A. Remley	635		50.00
" 20	M., K. & T. Railway Co	636		1.22
" 20	Teachenor-Bartberger Eng. Co	637		10.40

MONTHLY CROP REPORT (Continued.)

Date.	Name.	War. No.	Dr.	Cr.
Mar. 2	By E. A. Remley	638		$50.00
“ 8	E. A. Remley	639		324.80
“ 19	E. W. Stephens Publishing Co	640		1.80
“ 19	To requisition		$500.00	
“ 26	By M., K. & T. Railway Co	641		4.38
April 1	J. W. Butler Paper Co	642		225.00
“ 1	Robert W. Otto	643		5.25
“ 1	J. W. Peach	644		1.75
“ 1	E. A. Remley	645		7.20
“ 1	Columbia Missouri Herald	646		4.50
“ 29	Barnes-Crosby Co	647		126.87
“ 29	Columbia Missouri Herald	648		4.50
“ 29	23 Transfer Company	649		4.25
“ 29	J. W. Butler Paper Co	650		7.51
May 1	M., K. & T. Railway Co	651		14.95
“ 1	Barnes-Crosby Co	652		23.20
“ 31	Wabash Railway Co	653		1.44
“ 31	American Express Co	654		1.54
“ 31	M., K. & T. Railway Co	655		25.34
“ 31	Barnes-Crosby Co	656		24.73
June 6	23 Transfer Co	657		5.00
“ 6	E. A. Remley	658		24.15
“ 6	Columbia Missouri Herald	659		4.50
“ 29	To requisition		200.00	
“ 29	By Barnes-Crosby Co	660		4.13
“ 29	J. N. Mitchell	661		78.90
July 1	M., K. & T. Railway Co	662		10.47
“ 20	Columbia Herald Newspaper Co	663		4.50
“ 20	23 Transfer Co	664		1.25
“ 31	M., K. & T. Railway Co	665		9.32
“ 31	J. N. Mitchell	666		51.70
“ 31	23 Transfer Co	667		1.50
Aug. 31	To requisition		200.00	
“ 31	By J. N. Mitchell	668		47.10
Sept. 2	E. A. Remley	669		6.60
“ 2	Wells Fargo & Co., express	670		4.01
“ 11	Barnes-Crosby Eng. Co	671		3.39
“ 11	Columbia Herald Newspaper Co	672		26.05
“ 20	Knight & Rosse	673		1.15
“ 26	W. M. Conley	674		6.00
“ 30	Columbia Herald Newspaper Co	675		4.50
Nov. 25	Barnes-Crosby Co	676		2.31
Dec. 7	Columbia Herald Newspaper Co	677		12.50
“ 20	To requisition		133.88	
“ 19	By Paul Parsons	678		1.50
“ 19	Eloise Kneisley	679		27.50
Jan. 11	Balance			251.48
	Totals		$1,565.74	$1,565.74

EXPENSE OF MEMBERS.

Date.	Name.	War. No.	Dr.	Cr.
1912.				
Jan. 8	To balance on hand		$344.74	
“ 10	By Sanford Mc. Smith	859		$20.05
“ 10	H. C. Duncan	860		27.56
“ 10	T. J. Hedrick	861		23.00

EXPENSE OF MEMBERS (Continued.)

Date.	Name.	War. No.	Dr.	Cr.
Jan. 10	By W. R. Wilkinson	862		$26.30
“ 10	P. P. Lewis	863		18.35
“ 10	C. M. Barnes	864		36.65
“ 10	Henry Steinmesch	865		11.80
“ 10	A. T. Nelson	866		48.30
“ 10	George H. Sly	867		50.02
“ 11	W. A. Dallmeyer	868		13.30
“ 15	Fred T. Munson	869		21.50
“ 15	E. L. Newlon	870		25.95
“ 26	Charles Householder	871		6.40
“ 26	N. H. Gentry	872		13.75
“ 26	To requisition		$100.00	
Feb. 23	To requisition		200.00	
Mar. 20	By P. P. Lewis	873		17.80
“ 20	A. T. Nelson	874		29.40
“ 20	Henry Steinmesch	875		15.30
“ 20	E. E. Swink	876		41.00
“ 20	Wm. P. Evans	877		7.78
“ 20	W. R. Wilkinson	878		19.80
“ 20	H. C. Duncan	879		18.75
“ 20	J. H. Brayton	880		25.36
“ 20	George H. Sly	881		20.43
“ 20	E. L. Newlon	882		29.40
“ 20	F. B. Mumford	883		8.82
“ 20	C. M. Barnes	884		29.24
“ 20	T. J. Hedrick	885		13.00
“ 20	N. H. Gentry	886		3.25
“ 25	T. C. Wilson	887		6.62
“ 26	Fred T. Munson	888		13.50
April 1	W. A. Dallmeyer	889		7.98
“ 29	To requisition		300.00	
“ 29	By Sanford Mc. Smith	890		16.36
May 31	T. C. Wilson	891		5.80
June 1	J. H. Brayton	892		13.44
“ 29	T. C. Wilson	893		5.80
July 20	N. H. Gentry	894		12.55
“ 20	T. C. Wilson	895		18.56
“ 31	To requisition		200.00	
“ 31	By W. A. Dallmeyer	896		6.88
“ 31	E. L. Newlon	897		21.06
“ 31	William P. Evans	898		13.63
“ 31	Fred T. Munson	899		17.80
“ 31	C. M. Barnes	900		36.10
“ 31	W. R. Wilkinson	901		31.75
“ 31	H. C. Duncan	902		14.26
Aug. 31	Henry Steinmesch	903		23.30
“ 31	T. C. Wilson	904		21.02
Sept. 26	Henry Steinmesch	905		19.70
“ 26	Fred T. Munson	906		13.00
“ 26	J. H. Brayton	907		14.85
“ 26	C. D. Bellows	908		15.14
“ 26	P. P. Lewis	909		20.25
“ 26	T. J. Hedrick	910		10.00
“ 30	Western Union Telegraph Co	911		15.91
“ 30	George H. Sly	912		19.90
“ 30	T. J. Hedrick	913		12.50
Oct. 2	R. A. Young	914		22.80
“ 2	R. A. Young	915		23.50
“ 2	C. M. Barnes	916		33.65
“ 25	To requisition		200.00	
Nov. 15	By A. T. Nelson	917		32.05
“ 29	S. Mc. Smith	918		19.15

EXPENSE OF MEMBERS (Continued.)

Date.		Name.	War. No.	Dr.	Cr.
Nov.	29	By W. R. Wilkinson	919		$15.90
"	29	T. C. Wilson	920		7.05
"	29	P. P. Lewis	921		8.50
Dec.	7	E. L. Newlon	922		15.85
"	20	To requisition		$300.00	
"	19	By E. E. Swink	923		37.00
"	19	W. R. Wilkinson	924		19.30
"	19	A. T. Nelson	925		28.75
"	19	P. P. Lewis	926		11.25
"	19	P. P. Lewis	927		12.80
"	19	H. C. Duncan	928		17.20
"	19	J. H. Brayton	929		9.21
"	19	C. M. Barnes	930		28.50
"	19	W. A. Dallmeyer	931		8.60
"	19	C. D. Bellows	932		17.55
"	19	Wm. P. Evans	933		7.30
"	19	Henry Steinmesch	934		11.70
"	19	T. C. Wilson	935		11.55
"	19	P. P. Lewis	936		13.55
"	20	F. T. Munson	937		14.05
Jan.	11	Balance			168.06
		Totals		$1,644.74	$1,644.74

FARMERS' INSTITUTES.

Date.		Name.	War. No.	Dr.	Cr.
1912.					
Jan.	8	To balance on hand		$1,140.29	
"	8	By Eva Welch	1401		$31.95
"	8	The Statesman Publishing Co	1402		192.00
"	8	Columbia Telephone Co	1403		10.85
"	8	H. L. Kempster	1404		14.04
"	10	23 Transfer Company	1405		1.00
"	10	A. T. Nelson	1406		26.10
"	10	Carl L. White	1407		82.83
"	15	R. Warren Roberts	1408		16.50
"	15	W. C. Swarner	1409		11.50
"	15	John Shapley	1410		1.00
"	15	George T. Tippin	1411		25.17
"	15	A. N. Abbott	1412		31.65
"	15	Joseph E. Wing	1413		92.95
"	26	B. P. Smoot	1414		83.93
"	26	W. C. Swarner	1415		1.00
"	26	George W. Williams	1416		129.11
"	26	Henry Kirkland	1417		3.90
"	26	The Statesman Publishing Co	1418		43.75
"	26	A. W. Orr	1419		16.05
"	26	Sallie Kneisley	1420		6.60
"	26	George T. Tippin	1421		36.52
"	26	R. C. Lawry	1422		57.05
"	26	H. L. Kempster	1423		26.03
"	26	J. A. Wisdom	1424		16.50
"	26	Ernest Russell	1425		25.00
"	26	H. L. Russell	1426		66.10
"	26	Kenyon L. Butterfield	1427		110.64
"	26	H. C. Pierce	1428		41.90
"	26	To requisition		1,000.00	

FARMERS' INSTITUTES (Continued.)

Date.	Name.	War. No.	Dr.	Cr.
Jan. 26	By A. J. Glover	1429		$36.14
" 26	Herbert J. Krum	1430		44.70
" 26	W. H. Howell	1431		10.05
" 26	Lena Dunlap	1432		4.20
Feb. 1	Wells Fargo & Co., express	1433		26.37
" 1	American Express Co	1434		.90
" 1	W. A. Bright	1435		20.00
" 1	Columbia Telephone Co	1436		10.65
" 20	Athens Hotel	1437		2.50
" 20	Ernest Russell	1438		25.00
" 20	Nelle Carter	1439		28.55
" 20	Ilena Bailey	1440		26.30
" 20	E. A. Trowbridge	1441		4.77
" 20	T. C. Wilson	1442		27.56
" 20	Roscoe Smith	1443		1.25
" 20	Chandler & Chandler	1444		2.00
Mar. 2	O. J. Eidmann	1445		3.90
" 19	E. W. Stephens Publishing Co	1446		7.00
" 19	J. B. Rector	1447		46.30
" 19	The Statesman Publishing Co	1448		32.00
" 19	C. B. Hutchison	1449		6.31
" 25	George T. Tippin	1450		6.35
" 25	W. R. Wilkinson	1451		15.50
" 25	E. A. Trowbridge	1452		7.30
" 25	T. C. Wilson	1453		8.98
" 25	George W. Williams	1454		5.50
April 1	Verdie Read	1455		28.00
" 1	American Express Co	1456		5.75
" 17	T. C. Wilson	1457		3.05
" 29	P. M. Brandt	1458		4.90
" 29	S. M. Jordan	1459		135.58
" 29	E. A. Trowbridge	1460		5.30
" 29	B. P. Smoot	1461		22.70
" 29	Eva Welch	1462		10.00
" 29	Wells Fargo & Co., express	1463		7.68
" 29	T. C. Wilson	1464		6.77
" 29	J. Kelly Wright	1465		164.69
May 1	E. L. Newlon	1466		18.96
31	Mrs. Nellie Kedzie Jones	1467		50.00
" 31	Louise Stanley	1468		42.32
" 31	Eva Welch	1469		14.25
" 31	To requisition		$500.00	
" 31	By Mrs. Flora Hartley Greene	1470		22.22
" 31	Louise Stanley	1471		42.04
" 31	J. Kelly Wright	1472		145.09
June 29	To requisition		500.00	
" 29	By Verdie Read	1473		50.00
" 29	The Statesman Publishing Co	1474		30.00
" 29	The Missouri Valley Guide Co	1475		2.00
" 29	American Express Co	1476		3.85
July 1	J. Kelly Wright	1477		150.00
" 20	American Association Farmers Institute Workers	1478		5.00
" 20	The Statesman Publishing Co	1479		12.50
" 20	W. L. Nelson	1480		5.00
" 20	Eva Welch	1481		31.95
" 31	J. Kelly Wright	1482		182.95
" 31	E. A. Remley	1483		200.00
" 31	Wells Fargo & Co., express	1484		7.90
Aug. 10	T. C. Wilson	1485		7.60
" 10	T. C. Wilson	1486		16.70
" 10	E. A. Remley	1487		10.15
" 10	University Co-operative Store	1488		2.50

FARMERS' INSTITUTE (Continued)

Date.		Name.	War. No.	Dr.	Cr.
Aug.	10	By J. W. Butler Paper Co	1489		$7.50
"	10	E. A. Remley	1490		300.00
"	10	E. A. Remley	1491		300.00
"	31	To requisition		$2,000.00	
"	31	By C. B. Hutchison	1492		36.09
"	31	T. C. Wilson	1493		45.04
"	31	Eva Welch	1494		23.35
Sept.	2	American Express Co	1495		2.05
"	2	Columbia Telephone Co	1496		12.65
"	2	J. Kelly Wright	1497		207.21
"	11	E. W. Stephens Publishing Co	1498		1.60
"	11	T. C. Wilson	1499		6.05
"	11	E. A. Remley	1500		300.00
"	20	T. C. Wilson	1501		11.35
"	26	F. B. Mumford	1502		11.06
"	26	J. Kelly Wright	1503		179.50
"	30	Columbia Telephone Co	1504		11.10
"	30	W. L. Howard	1505		7.53
Oct.	5	B. P. Smoot	1506		31.55
"	22	A. W. Orr	1507		28.59
"	22	P. M. Brandt	1508		9.95
"	22	E. A. Trowbridge	1509		18.97
"	22	H. L. Kempster	1510		15.79
"	22	T. C. Wilson	1511		30.36
"	25	To requisition		500.00	
"	25	By Henry Kirklin	1512		30.08
"	28	J. C. Hackleman	1513		15.87
"	28	F. B. Mumford	1514		18.40
"	28	B. P. Smoot	1515		164.17
"	28	J. Kelly Wright	1516		275.35
"	28	T. C. Wilson	1517		16.80
"	30	Western Union Telegraph Co	1518		1.95
"	30	American Express Co	1519		8.88
"	30	George F. Jordan	1520		29.77
Nov.	15	T. C. Wilson	1521		85.22
"	15	A. W. Orr	1522		10.00
"	25	A. W. Orr	1523		23.56
"	25	J. C. Whitten	1524		14.15
"	25	C. A. Helm	1525		44.67
"	25	R. R. Huddleson	1526		7.04
"	26	To requisition		500.00	
"	29	By J. C. Hackleman	1527		10.85
"	29	J. Kelly Wright	1528		248.17
"	29	B. P. Smoot	1529		231.49
"	29	H. L. Kempster	1530		11.74
"	29	S. M. Jordan	1531		22.95
"	29	Howard Hackedorn	1532		20.65
"	30	R. R. Huddleson	1533		9.40
Dec.	7	L. C. Smith & Bros. Typewriter Co	1534		6.10
"	7	University Co-operative Store	1535		19.70
"	7	Mrs. C. W. Greene	1536		14.86
"	7	Cancelled	1537		
"	7	Cancelled	1538		
"	7	B. J. Lay	1539		5.97
"	7	American Express Co	1540		1.95
"	7	George W. Williams	1541		15.35
"	7	The Statesman Publishing Co	1542		46.25
"	7	A. W. Orr	1543		28.80
"	12	A. W. Orr	1544		43.37
"	12	H. L. Kempster	1545		16.65
"	12	C. H. Eckles	1546		14.75
"	20	To requisition		3,500.00	
"	19	By A. W. Orr	1547		50.00

FARMERS' INSTITUTE—Continued.

Date.	Name.	War. No.	Dr.	Cr.
Dec. 19	By J. Kelly Wright	1548		$250.94
“ 19	W. L. Nelson	1549		30.50
“ 19	E. A. Trowbridge	1550		4.58
“ 19	B. P. Smoot	1551		185.94
“ 19	E. W. Stephens Pub. Co	1552		16.50
“ 19	W. W. Phillips	1553		2.00
“ 19	J. W. Butler Paper Co	1554		37.45
“ 19	Louise Stanley	1555		29.35
“ 19	Highway Engineer Fund	1556		55.00
Jan. 11	Balance			2,806.73
	Totals		$9,640.29	$9,640.29

OFFICE EXPENSE.

Date.	Name.	War. No.	Dr.	Cr.
1912.				
Jan. 8	To balance on hand		$113.95	
“ 8	By University Co-operative Store	866		$12.30
“ 8	George P. Comer	867		2.50
“ 15	University Co-operative Store	868		6.70
“ 26	Newman Hardware Company	869		8.00
“ 26	Wabash Railway Co	870		.85
Feb. 21	Newman Hardware Co	871		2.75
“ 21	E. W. Stephens Publishing Co	872		12.50
“ 21	University Co-operative Store	873		5.73
Mar. 2	Remington Typewriter Co	874		3.50
“ 19	University Co-operative Store	875		3.91
“ 19	J. B. Butler Paper Co	876		6.60
“ 19	Graham Paper Co	877		3.95
“ 19	Newman Hardware Co	878		2.50
“ 25	St. Louis Paper Box Co	879		4.50
“ 25	The Hugh Stephens Printing Co	880		39.30
April 1	University Co-operative Store	881		4.35
“ 1	J. W. Butler Paper Co	882		31.83
“ 1	E. W. Stephens Publishing Co	883		4.50
“ 29	To requisition		50.00	
May 31	By Sengbusch Self-Closing Inkstand	884		12.00
“ 31	To requisition		50.00	
“ 31	By Wabash Railway Co	885		1.26
“ 31	University Co-operative Store	886		11.00
June 6	Libby & Williams Paper Co	887		9.00
“ 29	University Co-operative Store	888		6.95
July 20	E. W Stephens Publishing Co	889		2.40
“ 20	St. Louis Paper Box Co	890		4.50
“ 31	C. G. Morgan	891		3.50
“ 31	Cancelled	892		
“ 31	University Co-operative Store	893		4.00
Aug. 10	Adams Stamp & Seal Co	894		3.05
Jan. 11	Balance			.02
	Totals		$213.95	$213.95

EXTENSION COURSE IN AGRICULTURE.

Date.		Name.	War. No.	Dr.	Cr.
1912.					
Jan.	8	To balance on hand		$818.16	
"	26	By S. M. Jordan	108		$226.97
Feb.	1	J. Kelly Wright	109		160.38
"	1	W. A. Bright	110		20.00
"	23	To requisition		500.00	
Mar.	2	By S. M. Jordan	111		257.09
"	2	J. Kelly Wright	112		194.32
"	25	E. W. Stephens Publishing Co	113		35.00
"	26	S. M. Jordan	114		269.93
"	27	J. Kelly Wright	115		216.85
Apr.	17	T. C. Wilson	116		50.10
"	29	J. F. Barham	117		4.50
May	31	To requisition		200.00	
"	31	By E. A. Remley	118		75.00
Sept.	30	To requisition		300.00	
Oct.	25	By Louise Stanley	119		19.45
Nov.	25	Nelle Nesbitt	120		134.80
Nov.	26	To requisition		200.00	
Dec.	20	To requisition		300.00	
"	19	By Nelle Nesbitt	121		175.33
Jan.	11	Balance			478.44
		Totals		$2,318.16	$2,318.16

STATE VETERINARY FUND.

Date		Name.	War. No.	Dr.	Cr.
1912.					
Jan.	8	To balance on hand		$250.00	
"	8	By J. R. Seipel	2777		$5.75
"	8	H. C. Ward	2778		231.96
"	8	W. C. Sorber	2779		18.55
"	8	H. C. Tuck	2780		225.20
"	8	R. C. Moore	2781		25.00
"	8	Western Union Telegraph Co	2782		2.89
"	15	D. F. Luckey	2783		75.00
"	15	Mabel Blakeslee	2784		3.15
"	26	A. J. Hammerstein	2785		5.00
"	26	George W. Leber	2786		22.70
"	26	J. W. Riley	2787		10.50
"	26	To requisition		1,200.00	
"	26	By James Cullison	2788		18.40
"	26	R. C. Moore	2789		45.00
Feb.	1	G. Ellis	2790		84.43
"	1	Lyman D. Brown	2791		213.59
"	1	H. C. Ward	2792		239.15
"	1	H. C. Tuck	2793		246.35
"	1	H. J. Sebaugh	2794		17.39
"	1	W. A. Bright	2795		20.00
"	20	C. H. Dana	2796		188.22
"	20	E. E. Peacock	2797		12.45
"	20	D. E. Crites	2798		8.50
"	20	Boyd Miller	2799		2.00
"	21	Western Union Telegraph Co	2800		3.68
"	23	To requisition		1,200.00	
"	23	By G. Ellis	2801		48.95

STATE VETERINARY FUND—Continued.

Date.		Name.	War. No.	Dr.	Cr.
Feb.	23	By S. Sheldon	2802		$284.92
Mar.	2	G. P. Gant	2803		23.18
“	2	H. C. Tuck	2804		238.45
“	2	Lyman D. Brown	2805		227.09
“	2	Columbia Telephone	2806		6.55
“	2	R. C. Moore	2807		22.50
“	2	T. C. Wilson	2808		6.20
“	2	American Express Co	2809		6.82
“	19	D. F. Luckey	2810		15.38
“	19	The Statesman Publishing Co	2811		77.70
“	19	Western Union Telegraph Co	2812		4.49
“	19	H. C. Tuck	2813		235.35
“	19	E. A. Remley	2814		50.00
“	19	To requisition		$1,000.00	
“	19	By E. W. Stephens Publishing Co	2815		7.50
“	26	S. Sheldon	2816		206.40
“	26	Gus Ellis	2817		44.28
April	1	D. F. Luckey	2818		15.60
“	1	Lyman D. Brown	2819		214.85
“	1	F. A. Wolfe	2820		6.22
“	1	H. C. Tuck	2821		242.93
“	1	H. C. Ward	2822		218.58
“	1	R. C. Moore	2823		10.00
“	1	F. A. Wolfe	2824		35.72
“	1	James Cullison	2825		18.39
“	1	Columbia Telephone Co	2826		12.95
“	1	Wells Fargo & Co., express	2827		6.01
“	29	To requisition		1,500.00	
“	29	By E. A. Remley	2828		50.00
“	29	L. G. Clark	2829		12.79
“	29	A. C. Donohew	2830		6.00
“	29	J. C. Humphreys	2831		10.00
“	29	American Express Co	2832		1.75
“	29	Western Union Telegraph Co	2833		3.10
“	29	S. Sheldon	2834		212.54
“	29	G. Ellis	2835		32.31
May	1	Lyman D. Brown	2836		211.43
“	1	H. C. Ward	2837		240.56
“	31	The Missouri Store	2838		3.25
“	31	R. C. Moore	2839		7.50
“	31	J. C. Humphreys	2840		9.06
“	31	J. Harvey Slater	2841		9.25
“	31	E. B. Ward	2842		5.00
“	31	Harry C. Utley	2843		32.26
“	31	H. C. Tuck	2844		262.90
“	31	To requisition		1,000.00	
“	31	By J. Harvey Slater	2845		7.50
“	31	The Statesman Publishing Co	2846		18.75
“	31	G. Ellis	2847		37.13
“	31	Arthur J. Hammerstein	2848		47.40
June	1	W. R. Wilkinson	2849		16.50
“	1	E. L. Newlon	2850		14.55
“	1	George H. Sly	2851		15.48
“	1	A. T. Nelson	2852		22.75
“	1	Sanford Mc. Smith	2853		21.71
“	1	C. M. Barnes	2854		31.60
“	1	J. H. Brayton	2855		12.38
“	1	F. B. Mumford	2856		4.80
“	1	Henry Steinmesch	2857		7.70
“	1	H. C. Duncan	2858		10.81
“	6	H. C. Ward	2859		253.35
“	6	Lyman D. Brown	2860		233.55

STATE VETERINARY FUND—Continued.

Date.		Name.	War. No	Dr.	Cr.
June	6	By S. Sheldon	2861		$226.71
“	6	Ed Moore	2862		83.50
“	6	R. C. Moore	2863		12.50
“	6	W. D. Newton	2864		4.50
“	6	Wm. P. Evans	2865		14.19
“	6	C. H. Dana	2866		4.80
“	6	H. C. Tuck	2867		235.25
“	6	L. S. Backus	2868		20.50
“	29	To requisition		$1,500.00	
“	29	By J. C. Humphreys	2869		14.08
“	29	Arthur J. Hammersteip	2870		28.20
“	29	Columbia Telephone Co	2871		8.45
“	29	G. Ellis	2872		52.12
“	29	S. Sheldon	2873		188.32
“	29	H. C. Ward	2874		259.75
July	1	H. C. Tuck	2875		178.70
“	1	Penn's Pharmacy	2876		18.25
“	1	Lyman D. Brown	2877		231.50
“	1	W. F. Berry	2878		16.00
“	20	Lee Forbis	2879		17.00
“	20	Arthur J. Hammerstein	2880		2.50
“	20	W. E. Neil	2881		12.76
“	20	Ed Moore	2882		82.75
“	31	To requisition		1,000.00	
“	31	By A. J. Munn	2883		7.00
“	31	C. G. Morgan	2884		3.50
“	31	S. Sheldon	2885		191.73
“	31	W. B. Kirtley	2886		33.40
“	31	H. C. Tuck	2887		99.95
“	31	G. Ellis	2888		11.69
“	31	Columbia Telephone Co	2889		9.55
“	31	H. C. Ward	2890		240.10
“	31	Lyman D. Brown	2891		229.80
Aug.	10	Ed Moore	2892		90.37
“	10	William F. Roark	2893		89.04
“	10	Welch & Blosser	2894		15.00
“	31	To requisition		1,000.00	
“	31	By H. C. Utley	2895		11.36
“	31	Frank S. Betz Co	2896		1.55
“	31	Rothwell & Mordica	2897		2.50
“	31	H. J. Sebaugh	2898		8.75
“	31	Edwin M. Hendy	2899		8.16
Sept.	2	E. A. Remley	2900		75.00
“	2	H. C. Tuck	2901		251.15
“	2	S. Sheldon	2902		195.25
“	2	W. B. Kirtley	2903		50.00
“	2	Lyman D. Brown	2904		224.81
“	2	J. Harvey Slater	2905		4.00
“	2	F. A. Wolfe	2906		10.00
“	11	Walter E. Neil	2907		10.60
“	11	Ed Moore	2908		87.16
“	11	Horace Bradley	2909		20.18
“	11	H. C. Ward	2910		267.27
“	30	To requisition		1,000.00	
“	26	By J. C. Humphreys	2911		10.00
“	26	A. J. Munn	2912		7.46
“	26	F. W. O'Brien	2913		13.43
“	26	J. R. Seipel	2914		25.59
“	26	F. A. Wolfe	2915		17.86
“	26	W. B. Kirtley	2916		50.00
“	26	T. T. Tucker	2917		4.95
“	30	H. C. Tuck	2918		250.75

STATE VETERINARY FUND—Continued.

Date.	Name.	War. No.	Dr.	Cr.
Sept. 30	By S. Sheldon	2919	....	$283.32
" 30	R. B. Love	2920	....	19.50
" 30	Lyman D. Brown	2921	....	218.96
" 30	A. T. Kinsley	2922	....	7.50
" 30	T. J. Hedrick	2923	....	6.00
Oct. 7	H. C. Ward	2924	....	226.55
" 7	Ed Moore	2925	....	74.95
" 22	H. J. Sebaugh	2926	....	11.02
" 22	L. B. Graham	2927	....	30.00
" 22	E. B. Ward	2928	....	6.50
" 25	A. C. Donohew	2929	....	5.95
" 25	To requisition	....	$1,100.00	
" 30	By E. W. Stephens Publishing Co	2930	....	3.25
" 30	W. B. Kirtley	2931	....	50.00
" 30	S. Sheldon	2932	....	207.64
" 30	Western Union Telegraph Co	2933	....	2.71
" 30	Lyman D. Brown	2934	....	230.38
" 30	Columbia Telephone Co	2935	....	11.20
Nov. 15	The Statesman Publishing Co	2936	....	22.50
" 15	Horace Bradley	2937	....	10.25
" 15	J. W. Connaway	2938	....	45.17
" 15	A. T. Kinsley	2939	....	12.50
" 15	Ed Moore	2940	....	107.19
" 15	H. C. Ward	2941	....	231.34
" 15	Penn's Pharmacy	2942	....	7.60
" 15	H. C. Tuck	2943	....	234.95
" 25	S. Sheldon	2944	....	176.77
" 25	W. B. Kirtley	2945	....	50.00
Dec. 7	Western Union Telegraph Co	2946	....	.83
" 7	Lyman D. Brown	2947	....	221.75
" 7	H. C. Tuck	2948	....	258.91
" 7	Ed Moore	2949	....	89.40
" 7	A. T. Kinsley	2950	....	27.50
" 7	A. J. Munn	2951	....	10.00
" 7	H. C. Ward	2952	....	250.31
" 19	E. W. Stephens Publishing Co	2953	....	13.50
" 19	E. M. Hendy	2954	....	33.57
Jan. 11	To overdraft	....	1,668.24	....
	Totals	....	$13,418.24	$13,418.24

APIARY INSPECTION.

Date.	Name.	War. No.	Dr.	Cr.
Jan. 8	To balance on hand	....	$125.00	
May 1	By M. E. Darby	38	....	$166.45
" 31	To requisition	....	275.00	
June 6	By M. E. Darby	39	....	157.65
" 29	To requisition	....	100.00	
" 29	By M. E. Darby	40	....	152.00
July 31	To requisition	....	200.00	
" 31	By M. E. Darby	41	....	122.10
Aug. 31	To requisition	....	100.00	
Sept. 2	By M. E. Darby	42	....	172.70
Sept. 30	To requisition	....	200.00	
" 30	By M. E. Darby	43	....	147.60
Nov. 15	M. E. Darby	44	....	81.50
	Totals	....	$1,000.00	$1,000.00

STATE HIGHWAY ENGINEER.

Date.		Name.	War. No.	Dr.	Cr.
1912.					
Jan.	8	To balance on hand		$133.87	
"	8	By W. C. Davidson	417		$143.39
"	8	The Joseph Havens Co	418		13.75
"	9	Harry Jones	419		3.00
"	10	A. T. Nelson	420		23.70
"	10	George H. Sly	421		23.42
"	26	Charles Householder	422		22.60
"	26	L. S. Head	423		12.75
"	26	E. A. Remley	424		50.00
"	26	To requisition		600.00	
"	26	By G. F. Troxell	425		23.50
"	26	Ben C. Weakley	426		25.00
"	26	W. C. Davidson	427		112.91
"	26	Curtis Hill	428		284.20
"	26	L. Ruckert & Co	429		1.62
Feb.	1	W. A. Bright	430		20.00
"	23	To requisition		700.00	
"	23	By Curtis Hill	431		256.14
"	23	W. C. Davidson	432		140.33
"	23	Ben C. Weakley	433		25.00
"	23	Blair A. Ross	434		60.00
"	23	The Missouri Store	435		93.65
"	23	Barnes-Crosby Co	436		50.00
Mar.	19	To requisition		800.00	
"	25	By George H. Sly	437		11.94
"	25	J. H. Brayton	438		11.78
"	25	T. J. Hedrick	439		23.75
"	25	C. H. Killam	440		4.50
"	25	O. W. Childs	441		18.00
"	25	C. O. Raine	442		35.29
"	25	The Missouri Store	443		5.20
"	25	L. Ruckert & Co	444		16.95
"	25	The Statesman Publishing Co	445		31.00
"	25	Curtis Hill	446		321.17
"	25	Ben C. Weakley	447		25.00
"	25	Blair A. Ross	448		60.00
"	25	W. C. Davidson	449		131.13
April	1	E. A. Remley	450		50.00
"	29	To requisition		800.00	
"	29	By Barnes-Crosby Co	451		44.23
"	29	Columbia Telephone Co	452		7.95
"	29	L. Ruckert & Co	453		8.34
"	29	The Statesman Publishing Co	454		55.00
"	29	L. G. Courts	455		5.00
"	29	The Missouri Store	456		3.52
"	29	A. Fredendall	457		2.30
"	29	Economy Drawing Table Co	458		19.98
"	29	Curtis Hill	459		267.10
"	29	W. C. Davidson	460		168.44
"	29	Blair A. Ross	461		60.00
"	29	Ben C. Weakley	462		25.00
"	29	G. Ellis	463		2.75
May	1	L. G. Courts	464		5.00
"	31	To requisition		1,000.00	
"	31	By Blair A. Ross	465		10.20
"	31	Curtis Hill	466		253.14
"	31	Ben C. Weakley	467		25.00
"	31	C. B. Duncan	468		15.00
"	31	L. Ruckert & Co	469		1.64
"	31	The Missouri Store	470		8.80
"	31	Warrant canceled	471		

STATE HIGHWAY ENGINEER—Continued.

Date.	Name.	War. No.	Dr.	Cr.
May 31	By The Statesman Publishing Co	472		$55.00
“ 31	Columbia Telephone Co	473		9.70
June 1	W. C. Davidson	474		232.15
“ 1	T. C. Wilson	475		11.40
“ 6	Wells Fargo & Co., express	476		11.00
“ 29	To requisition		$600.00	
“ 29	By Wells Fargo & Co., express	477		10.82
“ 29	N. H. Gentry	478		11.55
“ 29	E. A. Remley	479		75.00
“ 29	L. Ruckert & Co	480		34.00
“ 29	D. Ward King	481		536.27
“ 29	Fred P. Barnett	482		196.00
“ 29	The Missouri Store	483		5.03
“ 29	P. Halloran	484		20.00
“ 29	W. C. Davidson	485		104.78
“ 29	Ben C. Weakley	486		25.00
“ 29	E. A. Remley	487		45.90
“ 29	Curtis Hill	488		335.31
July 1	E. A. Remley	489		18.25
“ 20	Sam S. Haley	490		20.65
“ 31	To requisition		308.70	
“ 31	By Curtis Hill	491		251.30
“ 31	W. C. Davidson	492		119.12
“ 31	Ben C. Weakley	493		25.00
“ 31	L. Ruckert & Co	494		5.36
“ 31	Statesman Publishing Co	495		9.50
“ 31	Fred T. Munson	496		15.50
Aug. 10	University Co-operative Store	497		.50
Sept. 11	Curtis Hill	498		287.17
“ 11	Ben C. Weakley	499		25.00
“ 11	W. C. Davidson	500		215.79
“ 30	Curtis Hill	501		263.44
“ 30	Ben C. Weakley	502		25.00
“ 30	W. C. Davidson	503		173.74
“ 30	J. H. Brayton	504		18.37
“ 30	J. H. Brayton	505		19.67
“ 30	Fred T. Munson	506		14.25
“ 30	Mrs. L. A. Bell	507		20.00
“ 30	Curtis Hill	508		279.41
“ 30	W. C. Davidson	509		171.26
Nov. 25	Mrs. L. A. Bell	510		25.00
“ 25	W. C. Davidson	511		169.46
“ 25	Curtis Hill	512		307.46
Dec. 19	E. W. Stephens Publishing Co	513		78.00
“ 19	E. E. Swink	514		25.00
“ 19	To Farmers Institute Fund		55.00	
Jan. 11	Overdraft		2,423.60	
	Totals		$7,421.17	$7,421.17

SUMMARY OF SECRETARY'S FINANCIAL STATEMENT.

PRINTING AND DISTRIBUTION OF ANNUAL REPORT FUND.

Date.		Dr.	Cr.
Jan. 9, 1912	To balance in State Treasury	$5,239.44	
Jan. 9, 1912	To balance in treasury of Board of Agriculture	611.83	
Jan. 9, 1912 to Jan. 11, 1913	By warrants drawn on Treasurer Board of Agriculture		$1,016.38
Jan. 11, 1913	By amount paid for printing and binding account with printing commission		4,497.49
Jan. 11, 1913	By balance treasury Board of Agriculture		337.40
	Totals	$5,851.27	$5,851.27

MONTHLY CROP REPORT FUND.

Date.		Dr.	Cr.
Jan. 9, 1912	To balance in State Treasury	$1,866.31	
Jan. 9, 1912	To balance in treasury of Board of Agriculture	531.86	
Jan. 9, 1912 to Jan. 11, 1913	By warrants drawn on Treasurer Board of Agriculture		$1,314.26
Jan. 11, 1913	By amount paid for printing account with printing commission		832.43
Jan. 11, 1913	By balance treasury Board of Agriculture		251.48
	Totals	$2,398.17	$2,398.17

EXPENSE OF MEMBERS FUND.

Date.		Dr.	Cr.
Jan. 9, 1912	To balance in State Treasury	$1,300.00	
Jan. 9, 1912	To balance in treasury of Board of Agriculture	344.74	
Jan. 9, 1912 to Jan. 11, 1913	By warrants drawn on Treasurer Board of Agriculture		$1,476.68
Jan. 11, 1913	By balance treasury Board of Agriculture		168.06
	Totals	$1,644.74	$1,644.74

FARMERS' INSTITUTE FUND.

Date.		Dr.	Cr.
Jan. 9, 1912	To balance in State Treasury	$10,469.95	
Jan. 9, 1912	To balance in treasury of Board of Agriculture	1,140.29	
Jan. 9, 1912 to Jan. 11, 1913	By warrants drawn on Treasurer Board of Agriculture		$6,833.56
Jan. 11, 1913	By balance in treasury Board of Agriculture		2,806.73
	By amounts paid for printing bulletins, account with printing commission		304.18
Jan. 11, 1913	By balance State Treasury		1,665.77
	Totals	$11,610.24	$11,610.24

OFFICE EXPENSE.

Date.		Dr.	Cr.
Jan. 9, 1912	To balance in State Treasury	$100.00	
Jan. 9, 1912	To balance in treasury of Board of Agriculture	113.95	
Jan. 9, 1912 to Jan. 11, 1913	By warrants drawn on Treasurer Board of Agriculture		$213.93
Jan. 11, 1913	By balance treasury Board of Agriculture		.02
	Totals	$213.95	$213.95

EXTENSION COURSE IN AGRICULTURE.

Date.		Dr.	Cr.
Jan. 9, 1912	To balance in State Treasury	$2,500.00	
Jan. 9, 1912	To balance in treasury of Board of Agriculture	818.16	
Jan. 9, 1912 to Jan. 11, 1913	By warrants drawn on Treasurer Board of Agriculture		$1,839.72
Jan. 11, 1913	By balance in treasury Board of Agriculture		478.44
Jan. 11, 1913	By balance in State Treasury		1,000.00
	Totals	$3,318.16	$3,318.16

STATE VETERINARY FUND.

Date.		Dr.	Cr.
Jan. 9, 1912	To balance in State Treasury	$11,500.00	
Jan. 9, 1912	To balance in treasury of Board of Agriculture	250.00	
Jan. 9, 1912 to Jan. 11, 1913	By warrants drawn on Treasurer Board of Agriculture		$13,418.24
Jan. 11, 1913	To overdraft	1,668.24	
	Totals	$13,418.24	$13,418.24

APIARY INSPECTION.

Date.		Dr.	Cr.
Jan. 9, 1912	To balance in State Treasury	$875.00	
Jan. 9, 1912	To balance in treasury of Board of Agriculture	125.00	
Jan. 9, 1912 to Jan. 11, 1913	By warrants drawn on Treasurer Board of Agriculture		$1,000.00
	Totals	$1,000.00	$1,000.00

STATE HIGHWAY ENGINEER.

Date.		Dr.	Cr.
Jan. 9, 1912	To balance in State Treasury	$5,285.98	
Jan. 9, 1912	To balance in treasury of Board of Agriculture	133.87	
Dec. 19, 1912	To Farmers' Institute Fund	55.00	
Jan. 9, 1912 to Jan. 13, 1913	By warrants drawn on Treasurer Board of Agriculture		$7,421.17
	By amounts paid for printing bulletins, account with printing commission		477.28
Jan. 13, 1913	To overdraft	2,423.60	
	Totals	$7,898.45	$7,898.45

REPORT OF THE TREASURER.

To the State Board of Agriculture:

I, W. A. Bright, Treasurer of the Board of Agriculture, submit the following report of the money received from the last report and from the State Treasurer, including balances and the amounts paid out on warrants presented against the several funds of the Board of Agriculture and the balances now on hand, January 11, 1913.

APIARY INSPECTION.

Date.		Dr.	Cr.
Jan. 8, 1912	To balance	$132.90	
June 3, 1912	To State warrant	275.00	
July 9, 1912	To State warrant	100.00	
Aug. 2, 1912	To State warrant	200.00	
Sept. 3, 1912	To State warrant	100.00	
Oct. 2, 1912	To State warrant	200.00	
Jan. 11, 1913	By warrants paid and cancelled		$1,007.90
	Total	$1,007.90	$1,007.90

DISTRIBUTION OF ANNUAL REPORTS.

Date.		Dr.	Cr.
Jan. 8, 1912	To balance	$611.83	
Aug. 2, 1912	To State warrant	500.00	
Jan. 2, 1913	To State warrant	241.95	
Jan. 11, 1913	By warrants paid and cancelled		$1,016.38
Jan. 11, 1913	By balance		337.40
	Totals	$1,353.78	$1,353.78

MONTHLY CROP REPORT.

Date.		Dr.	Cr.
Jan. 8, 1912	To balance	$612.80	
April 2, 1912	To State warrant	500.00	
July 9, 1912	To State warrant	200.00	
Sept. 3, 1912	To State warrant	200.00	
Jan. 10, 1913	To State warrant	133.88	
Jan. 11, 1913	By warrants paid and cancelled		$1,395.20
Jan. 11, 1913	By balance		251.48
	Totals	$1,646.68	$1,646.68

OFFICE EXPENSES.

Date.		Dr.	Cr.
Jan. 8, 1912	To balance	$113.95	
May 2, 1912	To State warrant	50.00	
June 3, 1912	To State warrant	50.00	
Jan. 11, 1913	By warrants paid and cancelled		$213.93
Jan. 11, 1913	By balance		.02
	Totals	$213.95	$213.95

EXPENSE OF MEMBERS.

Date.		Dr.	Cr.
Jan. 8, 1912	To balance	$364.14	
Feb. 5, 1912	To State warrant	100.00	
Mar. 4, 1912	To State warrant	200.00	
May 2, 1912	To State warrant	300.00	
Aug. 2, 1912	To State warrant	200.00	
Nov. 2, 1912	To State warrant	200.00	
Jan. 2, 1913	To State warrant	300.00	
Jan. 11, 1913	By warrants paid and cancelled		$1,496.07
Jan. 11, 1913	By balance		168.07
	Totals	$1,664.14	$1,664.14

EXTENSION COURSE.

Date.		Dr.	Cr.
Jan. 8, 1912.....	To balance............................	$818.16	
Mar. 4, 1912.....	To State warrant....................	500.00	
June 3, 1912.....	To State warrant....................	200.00	
Oct. 2, 1912.....	To State warrant....................	300.00	
Dec. 2, 1912.....	To State warrant....................	200.00	
Jan. 2, 1913.....	To State warrant....................	300.00	
Jan. 11, 1913.....	By warrants paid and cancelled..........	....	$1,839.72
Jan. 11, 1913.....	By balance............................	....	478.44
	Totals..........................	$2,318.16	$2,318.16

FARMERS' INSTITUTE.

Date.		Dr.	Cr.
Jan. 8, 1912.....	To balance............................	$1,551.88	
Feb. 5, 1912.....	To State warrant....................	1,000.00	
June 3, 1912.....	To State warrant....................	500.00	
July 9, 1912.....	To State warrant....................	500.00	
Sept. 3, 1912.....	To State warrant....................	2,000.00	
Nov. 2, 1912.....	To State warrant....................	500.00	
Dec. 3, 1912.....	To State warrant....................	500.00	
Jan. 2, 1913.....	To State warrant....................	3,500.00	
Jan. 11, 1913.....	By warrants paid and cancelled..........	....	$7,015.11
Jan. 11, 1913.....	By balance............................	....	3,036.77
	Totals..........................	$10,051.88	$10,051.88

STATE HIGHWAY ENGINEER.

Date.		Dr.	Cr.
Jan. 8, 1912.....	To balance............................	$151.21	
Feb. 5, 1912....	To State warrant....................	600.00	
Mar. 4, 1912.....	To State warrant....................	700.00	
April 2, 1912.....	To State warrant....................	800.00	
May 2, 1912.....	To State warrant....................	800.00	
June 3, 1912.....	To State warrant....................	1,000.00	
July 9, 1912.....	To State warrant....................	600.00	
Aug. 2, 1912.....	To State warrant....................	308.70	
Jan. 4, 1913.....	To State warrant....................	55.00	
Jan. 11, 1913.....	By warrants paid and cancelled..........	....	$5,212.39
Jan. 11, 1913.....	To overdraft..........................	197.48	
	Totals..........................	$5,212.39	$5,212.39

VETERINARY SERVICE.

Date.		Dr.	Cr.
Jan. 8, 1912	To balance	$510.27	
Feb. 5, 1912	To State warrant	1,200.00	
Mar. 4, 1912	To State warrant	1,200.00	
April 2, 1912	To State warrant	1,000.00	
May 2, 1912	To State warrant	1,500.00	
June 3, 1912	To State warrant	1,000.00	
July 9, 1912	To State warrant	1,500.00	
Aug. 2, 1912	To State warrant	1,000.00	
Sept. 3, 1912	To State warrant	1,000.00	
Oct. 2, 1912	To State warrant	1,000.00	
Nov. 2, 1912	To State warrant	1,100.00	
Jan. 11, 1913	To overdraft	10.11	
Jan. 11, 1913	By warrants paid and cancelled		$12,020.38
	Totals	$12,020.38	$12,020.38

REPORT OF STATE HIGHWAY ENGINEER.

To the Honorable State Board of Agriculture:

Curtis Hill.

While there has been an increase in efficiency and in the expense of this office because of growth, there has been no material change in the appropriations for operation. From the creation of the office in 1907 to the present time the appropriation has been $6,000 per year, $12,000 for each biennial period. Near the close of the biennial period of two years ago the office was practically closed for the last four months in order to avoid a deficiency. This year, however, it was thought best not to stop work on or about July when the funds became exhausted, but to run a deficiency, which, on January 1, will amount to about $2,800. The warrants are being held, upon a six per cent discount, by the Boone County Trust Company.

In the State there are approximately 108,000 miles of public roads, 100,000 culverts, structures of less than ten-feet opening, not including the small twelve-inch and less sized drains, 20,000 bridges, structures of more than ten-foot opening. We have a total of between four and five thousand miles of improved roads, good, bad and indifferent. The greatest mileage of permanent roads is in the counties of St. Louis, Jackson and Jasper. If to these we add Pike, St. Charles, Lincoln, Franklin, Jefferson, St. Francois, Gasconade, Cole, Cape Girardeau, Buchanan, Greene, Lawrence, Boone, Moniteau, Marion and Pettis, we have almost covered the mileage of permanent roads. The rest, made principally by special districts, are scattered over the State from one to ten miles in a place.

The road drag is used quite generally throughout the State. Here and there will be found a community, a district or a township which has the dragging work well organized and systematized. Fifty per cent of the road mileage of the State is adapatable to the use of the drag, the best maintenance tool known for earth roads. This is especially true in the great rich lands of western, central and northern Missouri. Hard surfacing material is scarce in parts of the north, north central and northwest portions of the State, but in many of these parts paving brick material is found. Gravel and crushed limestone roads are built generally throughout the State and in addition: in the southwest, flint boulders, mining chats and chert are used; in the central southeastern part, mining chats and decomposed granite; in the southeast, decomposed limestone and sand gumbo. Oil is used on the roads in Jasper, Jackson and St. Louis counties.

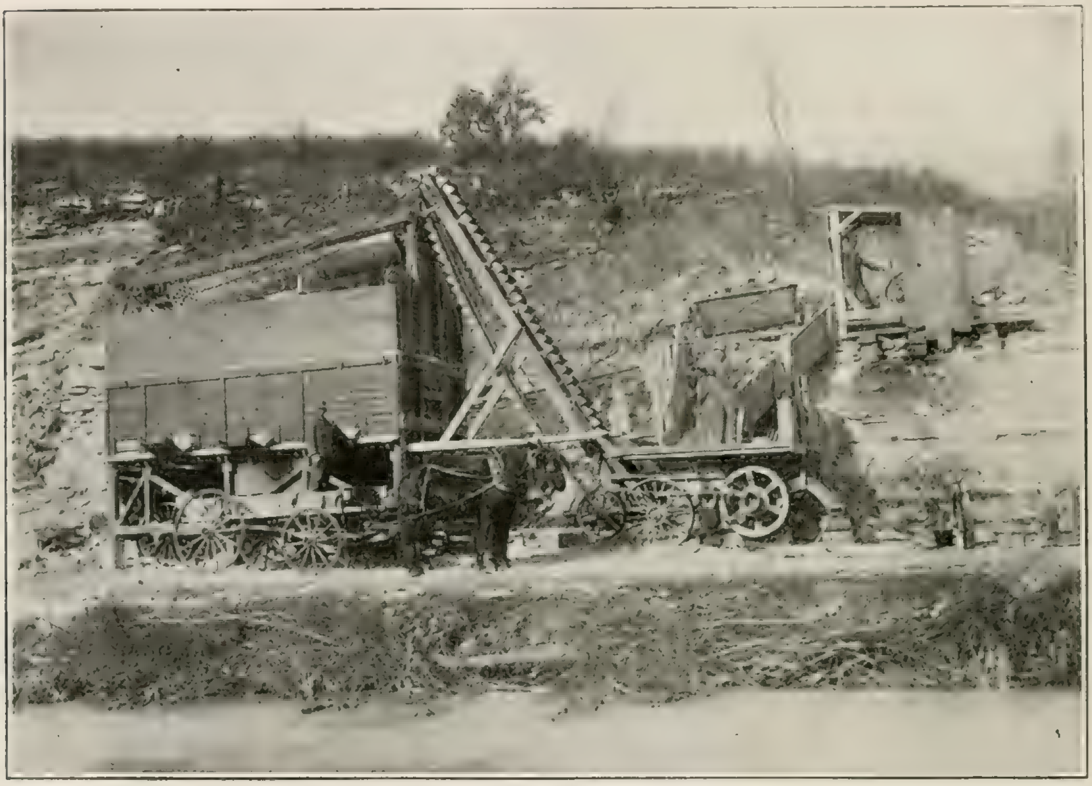
One of the well-dragged roads of Salisbury township, Salisbury, Mo.

It is no longer so much a question of the advantages of good roads as it is how to obtain the means with which to build them and how best to expend these means. Thought and action are turning to special district organization, followed by a tax per acre or a bond issue to pay the cost of construction and to township and county bonds. One hundred and forty of these special districts are now in operation in the State with several more likely to be formed in the near future.

The era of voting road bonds, and therefore I believe the era of real road making in Missouri, has begun within the past two years, almost within the past year. Boone county issued a few thousand dollars of rock road bonds in 1850 and Franklin in 1870. Forty years later, in 1910, a special district in Greene county issued $6,000. Beginning, then, with the agitation in 1911, and including the Greene county district issue, bonds have been voted to build roads in 11 eight-mile special districts, 10 benefit assessment districts and 4 townships, making 25 separate localities, in the total amount of $1,053,000. This department rendered some aid in every one of these localities, and in about three-fourths of them made preliminary estimates of cost and held road meetings.

The agitation, talk and road tours are having the desired effect to arouse enthusiasm and create definite action for improvement. The interest aroused by the tours, inspections and location of the cross-state highway over the Old Trails road has started travel across the central part of Missouri which hitherto went around the State and would continue to pass around if something or somebody did not invite the travelers across. It has aroused the good roads spirit throughout the entire counties through which the road is projected and has started action for general road improvement in a manner that is entirely satisfactory. The work, agitation and selection of the Old Trails road for the cross-state highway of Missouri by Board of Agriculture and its officers did not stop on the border of Missouri, but has expanded into a transcontinental Old Trails road from Washington to San Francisco, and with a Missourian, Judge Lowe of Kansas City, the first and present president of the national association. From a poor road across Missouri eighteen months ago, without a single efficient local road organization, to a fairly good summer road now, upon which not less than $100,000 has been expended, $350,000 in road bonds voted and with special and efficient local organizations along almost its entire length, is the general record along this route.

This road across Missouri is a fixture; it is here to stay, and sooner or later, whether in one year, five, ten or fifteen years time, it will eventually be a great highway. The long distance road is inevitable, and I look upon the establishment of the cross-state highway along the route of the Old Trails road as the greatest piece of road work accomplished by your administration.



Modern crushing plant—capacity, 150 tons per nine hours.

Some of the good road work of the State can well be illustrated by the selection of a few localities, so I beg to report upon one township, two special districts, each district representing different conditions, and one county. Special mention is made of these because we have been brought into close touch with them (there are many others in the State doing as well) and because these bring out distinctly the benefit of organization and close supervision, and are therefore good examples.

SALISBURY TOWNSHIP, SALIBURY, MO.

There are seven main roads, each five miles long, leading into Salisbury, making a total of 35 miles of road. These roads are being systematically dragged during the year. The system used is to employ a man living on each road to drag the road along which he lives when called upon to do so by the president of the township board. The draggers are paid 50 cents a mile for one round. They are under contract with the township board, who guarantees them 15 draggings each year. The cost for one dragging of a five-mile stretch is $2.50. Although 15 draggings per year are guaranteed, the number more often reaches 18 to 20. The drags used are a four-horse steel drag, purchased at a cost to the township of $17.50 each.

The funds for carrying on this work are obtained from the city council of Salisbury and from the township board, half from each. During the present year (1912) a total of $500 was raised. This money was deposited to the credit of Mr. John Legandre, president of the township board, and was paid out by personal check to the road draggers. The township board, at the beginning of the dragging season, drew one warrant for $250 in favor of the president of the board. This system of dragging has been used in Salisbury township for the past four years, and this 35 miles of roads will compare favorably with any earth roads in the State. It is now proposed to extend the above-mentioned system of dragging to all the roads in the township, rather than only the main roads leading into Salisbury.

Twenty-three concrete culverts were built during the summer of 1912. Last year seven concrete culverts were built; the year preceding that, one, and the year before that, none. All culverts up to two feet in diameter are corrugated metal without head walls. Above two feet in diameter they are built of concrete arch section with head walls. Two sizes of arches have been built thus far, namely, four feet and six feet. The county pays for all cost above $100 on a single culvert. The concrete foreman with team and helper is paid $5.50 per day.

MONETT SPECIAL DISTRICT.

The Monett, Barry county, district is a fair example of what may be accomplished by a special district of average conditions without issuing bonds. The district is in a square four by four miles, sixteen square miles area, and has twenty-eight miles of public wagon roads outside of the city limits of Monett, which city lies about one mile north of the center of the district with a population of four thousand. The population of the district outside of the city is about six hundred. The nature of the country is generally level to slightly rolling. There is considerable cherty and gravelly soil, which often makes an expensive first cost for grading. The district was organized in 1906.

Good concrete work, Monett district in Barry county.

The assessed valuation of the city is one million dollars, the area outside eight hundred and eighty thousand, a valuation for the entire district of $1,880,000. The county levies the full twenty-five cent special levy for road purposes and allows the district twenty cents of the proportion paid within the district, thus making a district fund of $4,700. Besides this there is saloon revenue for roads to the district of $3,000, pool and billiards $250 and $250 poll tax, making the total district road revenue about $8,200 per year.

Besides the three road commissioners, the Commercial Club of Monett has a road committee of three to help promote good roads interest and render whatever service they can. When the district was organized the first commissioners appointed a superintendent of roads of the district, who, except a one-year interval, has served continuously ever since. The district owns its road tools and machinery, hires men and teams and does its own work, except concrete, which is contracted. All actual work of whatever nature is under the direct supervision of the superintendent. Payments are made by warrants. All bills of materials, claims, orders, etc., must first be approved by superintendent. These are taken up at the end of each week and warrants drawn by the secretary of the commission for those approved and endorsed by the president. When presented to the treasurer the holder is required to endorse them, when a check is drawn for the amount.

All work of the district is substantially done. A number of concrete culverts have been built, two small concrete and one seventy-five foot concrete bridge. The roads are most all graded, some very well, and the main ones kept dragged under the supervision of the superintendent. All the hills have been cut until there is not a bad grade remaining within the district. While the hard surfacing is second-class work, five miles have been surfaced with a chert and gravel strip ten feet wide in the center of the road for about $1,000 per mile.

LEXINGTON SPECIAL DISTRICT.

Some of the best road work in the State is in the Lexington special district, Lafayette county. It is a fair example of good work under a road bond issue. This district is eight by eight miles, the Missouri river forming the north boundary and reducing the area of the district from that of a square by cutting in on the northwest corner, and contains about 75 miles of public roads. The district contains very little local rock of roadmaking quality, but some that may be used for base rock, all of it being too soft for the wearing surface. The topography is that usually found along the river bluffs, rolling and broken by small streams flowing into the river.

The assessed valuation of the district is two and three-fourth million dollars. The annual revenue derived from taxes and saloon licenses is about $12,000. This district was organized November 27, 1909, and on March 25, 1910, an election was held to issue $120,000 of road bonds, which carried by a vote of 1,344 to 237. When the law under which the bond election was held was found to be unconstitutional, the district officials had a new bonding law drawn and passed through the Legislature, and then called another bond election on April 10, 1911, for $125,000, which carried by an increased majority. The bonds were issued for fifteen years and were sold at five and one-half per cent at par. The amount of these bonds is a few thousand under the maximum of five per cent of the valuation allowed by law.

Considering that the valuation remains stationary and that the payment of capital and interest is extended equally over each year, it will require an annual payment of $12,000 to pay off the bonded intebtedness in fifteen years. This would require a levy of about 44 cents on the $100 assessed valuation. It costs the individual citizen living in Lexington with a business and property assessed for taxable purposes at $5,000, an average of $22.00 per year. Or, a farmer owning lands assessed at $15.00 per acre pays a little over six cents per acre per year. For a 200-acre farm it is $13.20 per year. Many of these men, interested in good roads, have been donating more than this amount every year before the bond issue, and had no roads, either. The board of commissioners of the district early employed a competent engineer for supervisor, and put him in charge of the field work. All bills and accounts are approved by the engineer, then passed upon by the board and paid by warrants, except contracts, which, after the work is accepted and approved by the engineer, are paid by checks.

The roads have been kept dragged, but the bulk of the work has been upon concrete crossings, no other kind being put in, and upon grading and rocking the road surface. All the crossings, culverts and bridges on all the main roads have been made of good substantial concrete at a contract price of from seven to nine dollars per cubic yard.

A well-dragged earth street in Salisbury. Note that the roadway section is not wide, thus making maintenance easier and better, and by leaving a parking on each side between the ditch and sidewalk, makes the street attractive.

The roadbeds are graded 32 feet wide and the rock sections are 16 feet wide. The rock sections are class A roads, with a sledge base 6 inches deep and a crushed rock surface 4 inches at the center and 3 inches at the sides. Six and four-tenths miles of the Higginsville road has been graded. The excavation amounted to 30,600 cubic yards of earth, at a contract cost of $7,340, or 24 cents per yard, $1,150 per mile.

Six miles of the Columbus road has been completed. This includes 3,910 cubic yards of earth excavation per mile, at a contract cost of $702, or 18 cents per yard. The rock, shipped by rail about forty miles, cost $4,884 per mile. The total contract cost for grading and rocking being $5,586 per mile.

The Old trails road is rocked for a distance of seven and one-half miles, three miles west and four and one-half miles east from Lexington. The three miles west was contracted for $6,100 for grading 22,486 cubic yards of earth, and 1,664 cubic yards of rock and $11,220 for rock, or $17,320 total for the three miles. Local rock was used here principally, the contract prices in place and complete being: base, $1.30 per cubic yard for local rock and $1.68 per yard for shipped, loose measurement. Top surface, $1.55 per cubic yard for local rock and $1.85 per yard for shipped, loose measurement.

The four and one-half miles east from Lexington was made entirely of shipped rock at a straight contract price of $2.25 per cubic yard, loose measurement, complete. This cost $6,200 per mile. The grading was 57,400 cubic yards of earth, an average of 1,275 yards per mile, at 13½ cents, or $1,689 per mile. The total cost for grading and rocking being practically $7,900 per mile.

A section of bituminous bound pavement was put down on a grade too steep on which to hold the water-bound macadam, as follows:

Grade of section paved	8 per cent.
Length of section paved	1,120 feet.
Width of section paved	30 feet.
Thickness of base (sledge base, loose measurement)	8 inches.
Thickness of top course (loose measurement)	2½ inches.
Bitumen (Am. asphalt) per sq. yd., 1st pouring	3.03 gals.
Bitumen (Am. asphalt) per sq. yd., 2nd pouring	0.50 gals.
Total bitumen per sq. yd	3.53 gals.
Cost of subgrade preparations	$0.061 sq. yd.
Cost of labor (hauling, teams, water, fuel, roller expense, laying and finishing)	0.540 sq. yd.
Cost of rock and freight on rock	0.589 sq. yd.
Cost of asphalt ($0.112 per gal.)	0.396 sq. yd.
Cost of incidentals	0.004 sq. yd.
Total	$1.590 sq. yd.
Rate per mile, 15-foot road	$13,992.00

MARION COUNTY.

The county of Marion was selected for this report because it is doing good work as a county unit under the strict supervision of a county highway engineer, and is not broken up into small units and is unhampered by townships or special districts. Marion county topography, soil and climate are characteristic of our river counties. The soil is a productive limestone soil, the topography broken by the river bluffs and streams flowing into the river, gradually becoming less broken and less rough as the distance from the river increases, until a few miles back it is a gently rolling to level farm country. Limestone or creek gravel of an average road-building quality is found generally over the county.

A well-crowned and maintained road in the Monett district.

The assessed valuation of Marion county is twelve and one-half million dollars. This figure includes real and personal property and all public service corporations. Road revenue is derived from a regular road tax of 10 cents on the $100 of assessed valuation, a special road and bridge tax of 25 cents on the $100 of assessed valuation and saloon licenses. The total amount of road funds available for the year 1912 is derived from the following sources:

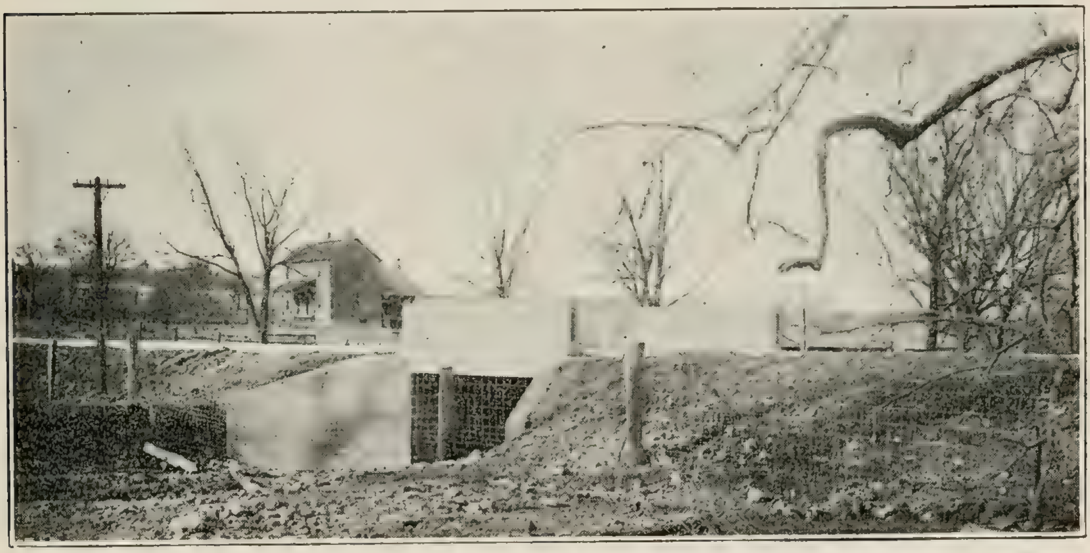
Saloon licenses	$14,000
Regular tax	6,000
Special tax, 25 cents on $100.00	28,000
Total yearly expenditure	$48,000

Of this sum $6,000 is paid to the road overseers for district work. Fifty per cent of this amount is paid to the road overseers in salaries alone. The remainder is spent on repairing wooden culverts and grading roads. According to a statement made by one of the county judges, "there is absolutely nothing to show at the end of the year for an expenditure of $6,000 of the county funds."

The sum derived from saloon licenses, $14,000, is expended in the construction of concrete culverts and steel bridges and the purchase of road machinery. Twenty per cent of this fund has been spent for machinery during the present year. The culvert and bridge construction is carried on under the direction of the county court and the county highway engineer. The distribution of this fund is as follows:

Steel bridges	$6,000
Machinery	2,800
Concrete culverts	6,200
Total	$14,000

On the rock road between Palmyra and Hannibal all the bridges and culverts are being paid for out of the fund derived from the special 25-cent levy. With this exception the money derived from the 25-cent special road and bridge tax is expended upon the construction of hard surfaced roads, of which there are now in the neighborhood of 75 miles in the county.



Reinforced concrete bridge, 15-foot span, 16-foot roadway and 7 feet clear waterway.

Taxes and license fees are first paid into the hands of the county collector, who turns it over to the county treasurer. It is then paid out to the treasury on warrants drawn by the county court. Payment is made for work every two weeks. The county engineer meets with the court and furnishes them an itemized progress report of the road work of the county, together with a statement of labor performed and materials used. The court then draws warrants to pay the bills which are presented and recommended by the engineer.

The total road equipment of the county represents an investment of $10,000, and includes approximately the following items:

1 10-ton road roller.
2 20-horse power steam engines.
2 120-ton capacity rock crushers.
2 spans of mules.
15 wheel scrapers.
20 drag scrapers.
2 elevators for rock crushers.
2 screens and bins for rock crushers.
Quarrying tools.
Road plows.
Road drags.
Road graders.
1 Monroe leveller with a 45-horsepower I. H. C. gasoline tractor.

Earth roadway first time over with modern machinery.

The steam traction engine costs $1,500, while the Monroe leveller and engine costs $3,200. The Monroe leveller is a form of road drag or grader which covers the entire roadway from ditch to ditch. Its field is the earth road, which must be graded to a good crown prior to use of leveller and the surface of the road must be practically free from vegetation, especially sod. The road should also be practically free of rocks. The machine and engine each cover a width of 12 feet, so that all culverts and bridges must have at least a width of 12 feet to allow crossing. The machine is so constructed that the grading blades may be drawn in, thus permitting the machine to pass over bridges and culverts, and also permitting its use on roads of less width than the maximum draft of the machine.

The operating expense of the Monroe leveller outfit is $9.00 per day. This figure includes gasoline, lubricant and hire of two men, one to operate the leveller and the other to run the engine. It is claimed by the manufacturers that 15 to 20 miles of road can be traversed per day one way, and that once going over the road is sufficient to put it in first-class condition. This assumes the road to be in ideal condition for work. It is our opinion, however, that one round will be necessary on most roads to give satisfactory results. Admitting that 20 miles can be traversed per day, and that one round is necessary to put the road in prime condition, a length of 10 miles of road can be graded per day. The cost will therefore be 90 cents per mile.

Hannibal and Palmyra macadam road, Marion county.

At the present time a macadam road is under construction between Palmyra and Hannibal, a distance of 12 miles. Seven miles of the road has been constructed. The work of construction is still going on, but it is not expected that the road will be completed before the summer of 1913. The rocking of the road is being done under a contract of $1.25 per cubic yard in the finished road, the county furnishing the crushing and quarrying equipment, consisting of engine, crusher, elevator, screen and quarrying tools which include drills, picks, crowbars, etc. The subgrade is placed in condition to receive the metal, and no part of its preparation or grading is included in the foregoing contract. All concrete culverts are constructed by the county, and this work is done prior to the macadamizing. Concrete for culverts is costing $7.00 per cubic yard. This road is costing $4,000 per mile, inclusive of the above grading, culverts and metal. There is not a grade on the entire 12 miles to exceed 4 per cent. The road is 22 feet wide from ditch to ditch, with a width of metal of 14 feet and a depth of 12 inches loose measure. The subgrade is being thoroughly rolled with a 10-ton roller before receiving the metal, which is placed in two courses, each 6 inches thick. Each course of crushed stone is likewise being thoroughly compacted by rolling. Limestone screenings are finally spread over the surface, which is again rolled. No water is used in the construction of the macadam roadbed.

Yours very truly,

CURTIS HILL,
State Highway Engineer.

Columbia, Mo., December 30, 1912.

ANNUAL REPORT OF THE STATE VETERINARIAN.

Mr. President and Gentlemen of the Board of Agriculture:

Dr. S. Sheldon.

I beg herewith to submit my annual report for the year 1912 for your consideration. All lines of sanitary control work attempted by this department have progressed satisfactorily.

We are much concerned over the numerous reports of sheep scabies. While the reported points of infection are reduced practically one-half over the year 1911, yet the infection is scattered over a wide territory and will demand our serious consideration and attention the coming year. There have been shipped from Missouri to the public markets thirty shipments of sheep infected with scabies. We have traced the infection from several of these shipments back to the public stockyards, unquestionably coming from other states.

This alone demonstrates the necessity of legislation governing the importation of live stock into this State. We would most heartily recommend a statute requiring that all live stock for entry into this State be properly inspected by official inspectors of the state of origin before being allowed to enter. We can never hope to entirely eradicate contagious diseases if we continue to be made the dumping ground for other states.

We firmly believe that all contagious and infectious diseases can and should be controlled, but owing to the condition of our funds for the past year it has been impossible for us to look after many calls that deserved an investigation. This is necessarily a serious drawback to our sanitary control work. It is all-important that we be prepared to promptly take charge of an outbreak of any contagious disease when it first makes its appearance.

The work of this office has steadily increased until we were compelled to keep a stenographer constantly employed. Mr. W. B. Kirtley was employed on July 10th at a salary of $50 per month and has rendered the State good and faithful service.

A tabulated report of investigations of contagious diseases will appear elsewhere in your annual report. I herewith give a brief summary covering contagious diseases with which we have had to deal in the past year.

ANTHRAX.

We received only one official report of anthrax for the past year within the State. This outbreak was promptly placed under strict quarantine and was confined to the farm where it originated. All other exposed animals were vaccinated against the disease and the premises disinfected, with the result that the loss was very light.

CEREBRITIS.

During the months of January and February and the first half of March the State suffered considerable loss from cerebritis, commonly called "cornstalk disease, "blind staggers," etc. This disease is caused by the stock eating moldy or wormy corn and corn fodder. Treatment is practically useless after the animal once develops the disease. Fortunately, it is easily prevented when the cause is pointed out and directions followed as to feeding. Horses are the most susceptible to the disease. A change to good, clean, wholesome food is all that is necessary.

FORAGE POISONING—OR HORSE PLAGUE OF THE CENTRAL WEST.

The widespread interest in this disease was due to the mysterious manner in which it spread over the western states, especially Kansas, Nebraska, Oklahoma, Colorado, Iowa and a few points in Missouri. Soon after the appearance of this disease federal and state officials hurried to the stricken field and began an extensive investigation to determine its cause and prevention.

The first cases reported were from Ness county, Kansas, the latter part of July, and the disease spread rapidly over the western half of Kansas and soon made its appearance in the other states above referred to. Many of the investigators claimed that the disease was not contagious, and that it was due to a fungus growth on the grass produced by the peculiar season. Others claimed that the disease was contagious.

In order to be better prepared to act intelligently we consulted with Governor Hadley, and at the Governor's directions we made a careful investigation of the disease. In the meantime hurried arrangements had been made for calling the Board of Agriculture together for the purpose of issuing a proclamation prohibiting the importation of horses from any of the states where the infection existed. After a careful investigation at Dodge City, Great Bend and Hoxie, Kan., we came to the conclusion that the disease was not infectious and could not be transmitted from one animal to another, but was simply a forage poisoning. Therefore a quarantine could offer us no protection and we so wired your honorable Secretary. In the meantime considerable pressure was brought to bear upon Governor Hadley, and in order to satisfy the people, a call was issued for a meeting of the Board of Agriculture at the Hotel Baltimore, Kansas City, where the situation was discussed in open meeting, when it was decided unanimously by the members of the Board of Agriculture present that a State quarantine was unwarranted and would offer no protection against the disease.

With the approach of cool weather the disease disappeared, but not until the several states above referred to had suffered a tremendous loss. We have received an unofficial report that Kansas suffered a loss of over 25,000 horses. A few cases developed in the extreme northwestern part of the State, but soon disappeared with a comparatively small loss, which did not exceed 75 head.

GLANDERS.

In the past year we have made splendid progress in the eradication of glanders from this State. There were 52 cases found within the State the past year, compared with 97 cases the previous year. The 52 cases were distributed as follows: Kansas City, 24; St. Louis, 6; St. Joseph, 2, and the balance of the State, 20. We are not entirely satisfied that the veterinarians of St. Louis are promptly reporting all cases of glanders found. We will give this careful consideration and investigate as to the facts and insist on all cases being promptly reported to this office. When we stop to consider the enormous traffic in horses and mules that is carried on throughout the State, and that one of the largest markets in the world for horses and mules is right at our very door, we must consider the above a remarkable showing for this State. The fact that we have so few cases of glanders in this State, compared with other states, is due largely to the small indemnity that is allowed for condemned horses and our rigid quarantine system and the thorough disinfecting of all premises when the condemned animals are removed. We have reliable information, however it is unofficial, that each of the Dakotas pays out more for horses and mules condemned for glanders than Missouri receives biennially for this entire department. The state of New York spends $350,000 annually in an attempt to eradicate glanders and tuberculosis, yet little is acomplished. In the city of Boston, during the year ending November 30, 1911, there were condemned 387 horses and mules for glanders. Compare St. Louis with Boston, where we find 6 cases for the former. Massachusetts spends $75,000 annually, while Missouri spends $12,500. The results obtained in Missouri are certainly very gratifying.

HOG CHOLERA.

The State is passing through one of the most disastrous outbreaks of hog cholera in its history. The disease covers practically the entire State. The infection, in a measure, was undoubtedly carried over from last year and, unless some radical action is taken by this Board with a view to the eradication and control of hog cholera, this terrible loss will continue indefinitely. The last crop report shows a shrinkage in our hog supply of 34 per cent. This cannot all be charged to hog cholera. We believe, however, that it is conservative to estimate our loss due to hog cholera at eight millions of dollars. This loss, unfortunately, falls for the greater part on the poor and those in moderate circumstances, leaving many farmers in Missouri without their meat supply for the coming year. Worst of all, we have not advanced one step in the direction of eradication, in fact general conditions are more unfavorable and the disease shows less signs of abating than it did one year ago. The results have been a sore disappointment to the taxpayers. Many things have contributed to the above failure.

Many plants have come into existence for the manufacture of hog cholera serum, when possible only two in ten are constantly manufacturing reliable and potent serum. This fact alone has caused many to doubt the efficiency of the serum treatment. The protection given by the serum alone method lasts only four to six weeks. However, many have used it without being properly advised as to the period of immunity. At the end of the above time Mr. Farmer's hogs would contract hog cholera. When he was again advised to vaccinate, he would reply that they had been vaccinated only a month previous and that there was nothing to the serum treatment, as he had tried it.

Then we have the simultaneous method that has contributed to the present outbreak of hog cholera. After my recent investigation, I found in one county that approximately ten thousand hogs had been vaccinated by this method. We personally consulted with many of the farmers in this county and individually they are more than pleased with the results. On the other hand we found at least two farmers whose hogs had contracted cholera from the above method, from recently vaccinated hogs, where hogs were allowed to associate with each other with only a wire fence between.

Serum administration has had much to do with discrediting its use. This is due to the fact that incompetent parties have gone forth with serum and syringe and vaccinated sick hogs, regardless of the disease that they were suffering from. Many were using impotent serum, others reduced the dosage in order to make the serum go as far as possible, as they were vaccinating for so much per head. The serum was administered in every conceivable manner. Hogs were left where they died to be feasted on by birds and dogs, or buried a few inches deep, only to be dragged forth at some future time, to start a fresh outbreak of hog cholera. All of the above have contributed to make this the most disastrous outbreak of hog cholera in our history.

When we cast about for a remedy, we must bear in mind that the Board of Agriculture is the only body in the State charged and empowered with the control of contagious diseases. Notwithstanding the good intentions of others, unless their efforts are under your control and directions, they must, in the future, as in the past, prove abortive.

As a remedy for the control of hog cholera, I would make the following remmendations:

First—That State serum be distributed and administered under the supervision of those charged with the control of contagious diseases. If this is not practical and the two departments cannot be brought together on a satisfactory basis, then we should ask for sufficient appropriations for the building of a plant, under your directions, for the manufacture of serum for distribution at actual cost of production.

Second—That all plants engaged in the manufacture of hog cholera serum, that do an interstate business, should be placed under the supervision of the Bureau of Animal Industry. All plants doing a State business should be placed under State supervision, with a license fee sufficient to cover cost of inspection. This would insure potent serum.

Third—The administration of the simultaneous method should be under the directions of those charged with the control of contagious diseases and should be properly safeguarded.

Fourth—The law governing the disposition of carcasses of hogs that have died of cholera should be changed. The word "bury" should be struck out, which would require all carcasses to be burned. The law should then be rigidly enforced.

Fifth—All railroad stock pens should be placed in quarantine and no hogs permitted to return to the country, after passing through or into said stock pens, except under the strictest sanitary precautions.

Sixth—Serum should be manufactured in sufficient quantities so that there would be no delay in taking charge of an outbreak of hog cholera and placing it under prompt control the same as other contagious diseases.

Seventh—Serum should be administered by the State free of charge. The owner should be instructed how to disinfect his premises in the most practical manner, also the precautions necessary to keep cholera from his farm. All directions and instructions should be in writing.

Eighth—For statistical and educational purposes, blanks should be furnished to those administering the serum, which should contain the following data: Date, name and address of applicant, number of hogs apparently well, number of hogs sick, total number of hogs treated, approximate weight, and amount of serum injected. This report should be filled out in duplicate and one copy filed with the State Veterinarian, and one with the director in charge of the laboratory in which the serum was manufactured. In addition to this, the owner should be furnished with blanks and should be required to file in duplicate, at the expiration of 30 days, as above, giving results of treatment.

In conclusion, if the above plans are not practical, then we would suggest that this board draw a plan of procedure that is practical and you will have our hearty co-operation and support.

RABIES.

The State has been very fortunate in the number of outbreaks of rabies; in fact we have had only two reports of rabies in live stock. Numerous cases have been reported in dogs, but perhaps less than any former year. When it is known that dogs have been exposed to rabies they should be destroyed, as the period of incubation varies, and an animal once inoculated with the virus from a rabid animal may develop the disease after many months.

DISEASE OF SHEEP.

No reports have been received of foot rot or lip and leg disease for the past year.

We have received several reports of stomach worms in sheep and have given the same our careful attention and prescribed for each, with beneficial results. We have received reports of thirty shipments of sheep to the public markets infected with scabies. Reports received show this disease to be badly scattered, as the disease originated in nineteen different counties. Laclede county leads in number of points of infection with seven. Wright is a close second with five, Howard has three, Morgan four, Shelby two, Atchison two, and Pike, Osage, Webster, Lincoln, Camden, Monroe, Pulaski and Daviess counties one each. It will be noted from the above that the infection is badly scattered and that it will require considerable time and expense to make a thorough investigation of the flocks in the different counties above mentioned and cause them to be dipped in the proper solutions and the premises thoroughly disinfected. We must give this our immediate attention as soon as our funds are available, with a view of eradicating sheep scab from the State. In connection with the above, I wish to direct your attention to the fact that six of the above points of infection were introduced into this State through the public stockyards, unquestionably originating in other states. Also, the commercial dips are to blame for a very large per cent of the scabies that now exists in this State. It will be the policy of this department in the future to recognize only two dips, namely, the lime and sulphur dip and the nicotine as prepared by the government formulas. We would also recommend for your consideration that a law be enacted prohibiting the importation of sheep that are intended for feeding or breeding purposes into this State until they have been inspected by the proper officials that are charged with the sanitary control work in the state in which they originate, or by a veterinarian in the employ of the Bureau of Animal Industry, and that they must be dipped at least once in one of the dips above referred to under the supervision of an inspector in the Bureau of Animal Industry, when passing through the public stock yards, before entering this State.

In the future no sheep will be released from quarantine unless one of the two dips above referred to has been used and again repeated on the tenth day, as per instruction from this office. By adopting the above plan we hope to secure and hold the confidence of the men interested in the sheep industry, thereby co-operating with them, and in a comparatively short time we should be able to eradicate sheep scab from Missouri.

SWAMP FEVER.

We have received reports of several cases of swamp fever, especially from the southeastern and southern part of the State; in fact we are inclined to believe that this disease is on the increase and should receive more careful attention the coming year. Experiments should be carried on in the laboratory to determine the most practical method for the control of the above disease.

TEXAS FEVER.

When we assumed the duties of the office of State Veterinarian on the 16th of last January, we found a part of four counties under State and federal quarantine, namely, Newton, McDonald, Oregon and Ripley counties. A full description of each of the counties that was under quarantine at this time will be given later in our recommendations. We immediately made arrangements with Dr. E. A. Wight of Little Rock, Arkansas, inspector in charge of tick-eradication work for the Bureau of Animal Industry, for a renewal of the previous contract between his department and the State of Missouri. It was agreed that he would duplicate the force employed by the State in this work. We employed Mr. Ed Moore, who was in the service of the State last year, as inspector in Ripley county,

Dr. H. C. Tuck, one of our regular field veterinarians, was sent to McDonald county with headquarters at Neosho. Later, Dr. L. D. Brown, another of our field veterinarians, was sent to Newton county, with instructions to look after the quarantined area and some additional territory in Jasper county, with headquarters at Joplin. Regular inspections were made of all herds where it was thought there was danger of infection being located. Some of the herds were examined only once or twice.

All ticky herds were placed under quarantine with the farm on which they were located and were held until it was thought that there was no danger of further infection. All premises where infection is liable to be carried over until next year are still in quarantine.

In McDonald county there were 278 herds held under observation. In the above herds there were 2,356 cattle. The number of herds found ticky during the season was nineteen, while eight herds were held in quarantine as probable points of infection for the year 1913.

In Newton county there was a total of 51 herds held under observation. The total number of cattle in the 51 herds was 429. Seven herds were found ticky, while seven were held in quarantine as probable points of infection for the year 1913.

In addition to the above a report was received at this office that a shipment of ticky cattle, originating at Cassville in Barry county, was received at the National Stockyards and Dr. H. C. Tuck and Dr. Elwell, veterinarian for the Bureau of Animal Industry, made an examination of the herds in that vicinity and found two herds of cattle infested with ticks. One herd of 30 head, owned by Mr. M. N. Brown of Cassville, was found badly infested and is held in quarantine. Another herd of eighteen belonging to W. A. Craig, near Cassville, was found slightly infected and is held in quarantine.

These farms will undoubtedly be infested next year. A report was received at this office that ticky cattle were shipped from Horse Hollow in Shannon county. An investigation was made by Dr. Tuck and Dr. Darby, veterinarian for the Bureau of Animal Industry, and it was found that three ticky cattle in the herd originated near Summerville, in Texas county. Few cattle were left on the range at the time of the above investigation and no other infection was found.

We would recommend that a thorough investigation of the herds in this vicinity be made early this year. We would also recommend that inspections be made early this spring over the territory and herds that are now held in quarantine, especially along the Oklahoma state line. We are in constant danger of ticky cattle drifting from infected territory in Oklahoma into Missouri, also from cattle that might be driven across the line in violation of our State quarantine.

Oregon county was found free from infection and will remain so unless infection is introduced from outside territory.

Ripley county, as in the past, has caused us considerable annoyance. Early in the spring of 1912 I made a trip to Doniphan and made arrangements to meet the cattlemen of the infested district. We talked over the situation and we finally persuaded them to build two dipping vats for the dipping of cattle in the quarantine area. I felt confident that we would be able to thoroughly eradicate the ticks from Ripley county. In this we were very much disappointed. While many of the cattle owners co-operated faithfully with the State and federal inspectors, yet there were enough that were indifferent and that refused or neglected to bring their cattle to the vats on the date set to greatly hinder and delay our work of eradication. Much of the infection was carried through the winter by the town cows of Doniphan. It will therefore be necessary to hold the quarantine area in Ripley county over for another year.

I would therefore recommend that the following area in Ripley county be held under State and federal quarantine another year:

Congressional township 23 N., range 1 E. Congressional township 23 N., range 2 E. The north half of congressional township 22 N., range 1 E, and the part of the north half of congressional 23 N, range 2 E, which lies west of Current river.

The above area can be easily inspected this coming year and there is no reason why the quarantine should not be raised at the end of the tick season, if the cattlemen will render the State and federal authorities any assistance at all. I would recommend that the following areas hereinafter described be released from quarantine, except the cattle and farms that are now held under local quarantine:

Oregon county—Congressional township 21 N., range 3 W., and the south half of congressional township 22 N., range 3 W.

Newton county.—That part of congressional townships 27 N., ranges 33 and 34 W.; also that part of the west half of township 27 N., range 32 W., which lies north of Shoal creek. All this can be locally known as that part of Shoal creek municipal township which lies north of Shoal creek.

McDonald county—Congressional townships 22 and 23 N., range 34 W.

The above area, except that part of Ripley county and all of Oregon, Newton and McDonald counties, except the farms and cattle held under local quarantine, I would recommend a release at once.

TUBERCULOSIS.

Perhaps there is no disease with which we have to deal that is of such great social and economic importance as tuberculosis. The fact that this disease is readily transmitted from animal to man is no longer a question of doubt. When we stop to consider the enormous waste of human lives that is caused annually by tuberculosis, we find that this disease is worthy of our most serious consideration.

It is conservatively estimated that throughout the civilized world there is a death loss of 1,095,000 annually; 3,000 for each day, 2 for each minute. In Missouri for the year 1911, there were over 5,000 deaths and over 50,000 men, women and children that were partially or totally incapacitated from earning a livelihood.

In Bulletin No. 11, which is now in press, we have cited many authentic cases from our most scientific investigators showing that bovine tuberculosis is readily transmitted to man, especially is this true of children.

We believe that it is simply a waste of time and money to attempt the eradication of tuberculosis in man without first rendering the source of our milk supply free from the tubercle bacilli. Practically all states are taking active steps to eradicate this disease from their dairies. The plan outlined by your former State Veterinarian will be followed, with but few changes, for the eradication of tuberculosis from the cattle of Missouri.

When we assumed charge of the office, we found that what is known as the "intradermal tuberculin test" was giving splendid results, as was shown by the records on file, therefore this method was continued. During the year ending January 1, 1913, there were tested and tagged by the State, 9,291 cattle. The number of those tested and not tagged was 682. All of the above cattle were found healthy. The number of tuberculous cattle condemned during the year was 337. The number of those slaughtered where no lesions were found was 8. The number tested by the Bureau of Animal Industry and tagged with State tags, 4,976. The number condemned by the government for tuberculosis was 91. The total number tested by the State and government and found healthy was 14,267. The total number of cattle tested in the State for the year ending January 1st was 15,377. The total number of cattle admitted into the State for feeding and grazing purposes and immediate slaughter, for which certificates were issued on affidavit was 417,493.

To show the enormous amount of work that can be accomplished with the intradermal test in our tuberculous eradication work we will give as as an illustration the following: During the past year there were approximately 1,500 separate herds tested by the above method. Of the three deputies employed in this work, only one worked the entire year, the other two put in but six months each, when they were removed to the tick-eradication work. You will therefore note that these men accomplished in one year, with the intradermal method, work which would have required five years under the old thermal method. During the past year we have tested the dairy herds supplying milk to the following cities: St. Joseph, Sedalia, Independence, Kirkwood and Springfield. All tuberculous animals were promptly removed from the herd and slaughtered as required by law. The herds were again retested at the proper time, and when we were satisfied that they were free from tuberculosis they were issued a health certificate.

Our tests have been followed in each instance by an inspection by Dr. Cutler, your Drug and Food Commissioner, with splendid results.

The pure-bred breeders of the State are beginning to realize the importance of the tuberculin test. We have on file in the office many applications to which we are giving our attention as fast as possible. We believe that this should be encouraged. With this end in view, at a recent meeting of the Association of State Veterinarians the following resolution was introduced:

Resolved, That it is the sense of this association that the authorities charged with the control of live stock sanitary matters in each state do everything in their power to encourage the owners of tuberculosis free herds, as determined by official tests. To this end the names and addresses of the owners of such tuberculosis free herds should be supplied to the agricultural press for publication and time limits on tuberculin test certificates accompanying interstate shipments of cattle from such herds may be extended as may seem wise.

It is further the sense of this association that the names and addresses of the owners of notoriously tuberculous herds and those of unscrupulous dealers shall be furnished to the authorities charged with the control of contagious and infectious diseases in the several states.

PAUL DISCHER, Chairman,
Ohio.
J. I. GIBSON, Iowa.
O. H. ELIASON, Wisconsin.
S. SHELDON, Secretary,
ROBERT GRAHAM, Kentucky.
Committee.
December 4, 1912.

We believe that this is a step in the right direction, and that all herds that are found free from tuberculosis or placed under the charge of this department and tested from time to time until the disease is eradicated should be encouraged. A list of the herds known to be free from tuberculosis should be given publicity, so that breeders may know where to buy cattle that have been officially tested.

During the past year the validity of our proclamation governing the importation of dairy and breeding cattle into this State has been questioned. A short time ago a temporary injunction was granted against this office, preventing the enforcement of the tuberculin test of cattle coming from St. Clair county, Illinois. While we confidently expect to have this injunction dissolved at the hearing for the permanent injunction, we are, for the present, being made the dumping ground for cattle coming from the National Stockyards. In order to better protect our live stock industry, I would recommend that a law be enacted requiring all live stock entering this State to be properly inspected by the proper officials and accompanied by a certificate certifying that they are free from contagious and infectious diseases. With the exception of Florida, Illinois, Nevada, Ohio and West Virginia, every state in the Union is now enforcing quarantine regulations, thereby preventing the introduction of diseased stock. It will be impossible to eradicate contagious diseases, unless statutory protection is provided.

S. SHELDON,
State Veterinarian.

REPORT OF DAIRY COMMISSIONER.

To the Honorable Board of Agriculture:

Dr. W. P. Cutler.

Last March, through the courtesy of the Burlington Railroad, a dairy and poultry special was run over that road from St. Louis north and west. Leaving St. Louis at 8 o'clock the morning of March 5th and concluding the run on March 9th, the following towns were visited: Winfield, Elsberry, Clarksville, Canton, Palmyra, Monroe, Shelbina, Clarence, New Cambria, Bucklin, Brookfield, Chillicothe, Hamilton, Lathrop, Kearney, Harlem, Cameron, St. Joseph, Amazonia, Savannah, Bolckow, Barnard, Pickering, Hopkins, Maryville, King City, Darlington, Bethany, Ridgeway and Albany.

Through the courtesy of Dean Williams of the school of journalism, certain members of the school accompanied the train to write up each meeting. Previous to the running of the train, the young men of the school of journalism wrote for each paper in each town to be visited an account of what was expected to be accomplished by the lectures, and setting forth the advantages of Missouri as a dairy State.

During the trip it was found that over one hundred columns of reading matter had been printed relative to the train and its personnel, and material was accumulated to be used by these journalists in the future in writing up Missouri for magazines and papers out of the State. The train was unaccompanied by any special advertising feature other than the lectures.

That great good was accomplished is evidenced by the fact that it was estimated that at least 20,000 farmers and their wives attended these lectures, filling two lecture cars at each stop, and often making an overflow meeting necessary. The interest was especially noticeable at Ridgeway in the northern part of the State. There eighteen inches of snow covered the ground, yet not less than one hundred and fifty bobsleds were in evidence about the hitching racks in town, and not less than 1,000 people were present at the station to receive the train. Six lectures were given at this point.

I desire to emphasize the able assistance given by Hon. T. E. Quisenberry, Director of the State Poultry Experiment Station, R. C. Lawry and Mr. Curtis Hill, State Highway Engineer.

In the larger towns where the evening lectures were given, in almost every instance the commercial club of that town took charge of the meeting. In each town, also, a lecturer was provided for the high school.

Following concerning the trip is from the University Missourian, but as here used is necessarily condensed:

> Dr. W. P. Cutler, State Dairy and Pure Food Commissioner, Prof. Frank L. Martin and six students of the school of journalism, arrived in Columbia yesterday afternoon after a five-day trip through northern Missouri on a dairy and poultry special train run by the Burlington Railroad. Dean Walter Williams, who was on the train three days, came home Saturday.
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> The trip ended Saturday night at St. Joseph, where the party broke up. Dr. Cutler and the journalists, with R. C. Lawry of Pacific, Mo., were taken in a special car to St. Louis, the near point to Columbia on the Burlington's lines.
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> Thirty-one towns in northern Missouri were addressed by the lecturers on board the special train. It is estimated that not less than 20,000 persons heard the lectures. At nearly every stop the two lecture cars on the train were filled, talks were made at the high schools and in several towns overflow meetings were held on the station platform. The trip is said to have been one of the most successful ever made by a railroad in this State.
>
> Dr. W. P. Cutler managed the trip, and a large measure of its success is due to him. The six students in journalism, working under the direction of Professor Martin, furnished news stories to about seventy-five newspapers. At Canton, Mo., the last lecture stop during the first afternoon out, the merchants closed their stores to hear the lectures. Passing through Hannibal, the train proceeded to Palmyra for the first night stop. A big meeting was held in the Marion county courthouse.
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> At New Cambria, on the second day's run, a brass band and an immense crowd met the train. The night stop was at Brookfield. Dean Walter Williams joined the party here and made an address in the circuit court room at Brookfield. The third night's stop was at Cameron, Mo., and after the lectures the train left for St. Joseph, where the party spent the night Friday. The train went north over the Creston branch of the Burlington, a busy day ending with a night meeting at Maryville. The night was spent at St. Joseph, and Saturday the train traveled over the Chariton branch as far as Ridgeway. At this point, nine miles from the Iowa line, the highest attendance record was reached, close to 1,000 persons hearing the lecture.
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> The lecturers on the special train were: Dr. W. P. Cutler, State Pure Food and Dairy Commissioner; E. A. Ikenberry, State Dairy Inspector, Columbia; T. E. Quisenberry, Director of the State Poultry Experiment Station, Mountain Grove; R. C. Lawry, Pacific, Mo., and Curtis Hill, State Highway Engineer, Columbia. Besides Dean Williams, who was with the party almost three days, the following were from the school of journalism: Professor Martin, E. R. A. Felgate, Shanghai, China; F. M. Harrison, Gallatin, Mo.; B. O. Brown, Fort Worth, Tex.; Seigel Mayer, King City, Mo.; E. M. Todd, Columbia; Walter Stemmons, Joplin, Mo. The following men were on the trip: J. D. Baker, division passenger agent, St. Joseph; A. L. West, assistant general freight agent, St. Joseph; F. E. Hollingshead, general agent, Hannibal; C. P. Lewis, superintendent dining car service, Chicago; Sidney Roy, secretary of the Hannibal Commercial Club, and J. A. Corby of St. Joseph, were on the train during parts of the trip.

On the first of June Inspector E. A. Ikenberry tendered his resignation in order to accept a position with the Federal Government, since which time no especial inspection of the milk stations in Missouri has been accomplished other than that incident to food inspection.

During the month of February, by invitation of Mr. Eugene Bennett and Mr. Tom Hall, the Commissioner, together with Inspector Ikenbery, visited Carthage and vicinity, and each made ten speeches in the schoolhouses of Jasper county, advocating the milking of cows by the farmer as being especially profitable. The weather was very cold, but through the courtesy of Messrs. Bennett and Hall, the speakers were provided with an automobile, and on several occasions as many as twenty-five miles were traveled to reach speaking points.

The result of this campaign was the establishment of a splendid modern creamery at Carthage, which is now prospering. The capital stock of this creamery has recently been increased, and the people of Carthage and vicinity are taking great interest in the enterprise. The creamery company has purchased a large automobile truck which gathers up the cream through the county and delivers it to the creamery each day.

Colonel W. H. Phelps, notably, has built a model dairy barn on a farm a mile from Carthage, and has placed therein forty Jerseys, most of them registered. I consider this extremely fortunate for the dairy interests of that region, for the reason that this up-to-date, well-equipped plant will always be a demonstration to the farmers of the possibilities of dairying, and it will be a center to which the farmers of Jasper county can come to learn the best methods. It would be very much to the advantage of the State if other public-spirited citizens would take the initiative in this particular.

Not only has the dairy plant just mentioned above been established near Carthage, but many of the farmers in Jasper county are going into the dairy business, and many have added cows to their herds.

During the month of January, Inspector Ikenberry scored 78 dairies in St. Louis, totaling 2,070 cows; total number of cows milking, 2,000, producing 4,665 gallons daily; each dairy averaging 26.54 cows; average number milking, 25.64, producing 59.81 gallons daily, with an average score of 55.21. The lowest score found was 43; the highest 69.

During February, March, April and May, the dairies furnishing milk to St. Joseph were scored, showing 43 dairies inspected, with a total of 954 cows, 814 cows milking, furnishing 1,707 gallons daily, with an average number of cows, 22.19; number milking, average 18.93; average number of gallons, daily, 39.69, with an average score of 47.72.

Much good has been accomplished with the dairies around St. Joseph through co-operation with Dr. S. Sheldon, the State Veterinarian. The latter inspected a large number of herds and in each instance where tuberculous cows were found, report was made to the Dairy Commisioner and parties were notified by him that they would be prosecuted if they sold milk from these condemned animals, the result being that very few cows at the present time furnishing milk to St. Joseph are tuberculous.

Several other towns in the State were visited and the dairies scored—notably Sedalia, with the following results: Eighteen dairies, totaling 321 cows; number milking, 288, producing 838½ gallons. Average number of cows to each dairy 17.83; average number milking, 16; average number of gallons daily, 29.67, with an average score of 40.83. In this connection a report was made to the mayor and city council of Sedalia by Inspector Ikenberry, which illustrates largely conditions in most of the larger towns of the State. This report, addressed to the mayor and city council of Sedalia, was as follows:

REPORT OF INSPECTOR IKENBERRY AT SEDALIA.

I have the honor to report that the courtesy shown the State Dairy Commissioner's Department by the city officials in furnishing transportation has enabled the inspection in detail of seventeen dairies which furnish milk to Sedalia.

There are many persons keeping one or more cows that I have not visited because of the time allotted me in your city.

The conditions of the dairies here are no worse than elsewhere where no inspection is carried on, but the conditions are of no credit to either the dairymen or the city of Sedalia if handled as they have been in the past.

The construction and equipment, such as the barns and milk houses, on the whole are fair, but in some instances they are very poor. The inexcusably bad feature of the conditions found is the insanitary methods of handling the milk on the part of most dairymen.

This is due to carelessness and can be greatly improved without much expense. It is these conditions that have caused the scores to range from 26 to 64 out of a possible 100 points. For instance, their barns were not clean and a number of their lots were filthy.

There is only one man who I believe practices the washing or wiping of the udders with a wet cloth, and then keeping his hands washed and clean between milking each cow. This practice is very essential both summer and winter.

In many instances the milk is strained and kept in the barn for some time instead of removing it immediately to a milk house. Some milk goes directly from the barn to the consumer, and the dreadful fact is that this milk is not cooled. Milk should be cooled to at least 50 degrees Fahrenheit immediately after milking each cow.

Much milk is not bottled as it should be, but poured from vessel to vessel on the dusty streets.

Some dairymen have resorted to two deliveries a day in order to keep their milk from souring. Insanitary conditions and improper cooling has driven them to this practice. I do not wish to be understood as saying that the delivery of milk twice a day is not a good practice, but I do believe that the milk should be taken care of so as to make such a practice unnecessary. In this particular connection allow me to state that much milk is not properly handled in the consumer's hands and too often the dairymen are unjustly blamed.

Because of the time allotted me here I have taken no samples and cannot say as to its purity. Another man will follow me in this work. However, I have reason for suggesting that this phase of inspection be investigated from time to time. The man who uses a preservative for keeping his milk is a criminal and should be treated as such.

Many of the milk houses are not kept clean, and some are not screened against the flies. The vessels are not inverted in pure air and cared for as they should be by some men.

There was one dairyman who for one and one-half months ran his retail route during which time he had four children with scarlet fever in his house. This family was attended by a Sedalia doctor who knowingly permitted this dreadful and unlawful act. It is over now, and to mention this in a newspaper would put the poor dairyman out of business while had it been handled properly, the cows could have been moved from the premises, and dairying could be continued by another party for a few months.

In my visit I have talked over the various conditions above mentioned with many other problems in a heart to heart manner with each man, with a view to educating him, at the same time pointing out improvements which can be made with little expense and giving good results, not only to the dairymen, but to the consuming public.

Each dairyman has taken to my suggestions and treated me with hospitality. Many of them will follow up my suggestions, while there are probably others who will continue in their usual way. These may be the ones that are now in the worst condition.

For the protection of the man who is doing the right thing and for the good of the dairy industry, I recommend to the city council that they pass a rigid ordinance covering all phases of the dairy work.

This will protect the man who is trying to do the right thing and it will line up the crook or close him out with continued and increasing fines. The good dairymen of Sedalia will back the city in this movement.

After the ordinance is passed, a qualified inspector should be employed, one with modern ideas, to help the dairyman who wants help, and at the same time with backbone enough to line up the crook, the man who poisons your babies or sells you water for milk, or handles his product in an insanitary manner.

Milk, if embalmed, watered or handled in an insanitary manner, can be sold cheaper than good milk, and it is this fact that is causing many prominent families of Sedalia to compel their milkmen to do things which are unlawful or lose their trade, because some other crook has offered them a few more tickets for a dollar. I consider seven cents a quart for summer milk and eight cents a quart for winter milk a fair price to the dairymen for retailing bottled milk which has been produced from cows free from tuberculosis, kept in clean barns and handled properly.

Late in the summer, owing to the prevalence of typhoid fever in Springfield, the president of the State Board of Health requested the Dairy Commissioner to make an inspection of the dairies around that city, including the water supply, with a view of eliminating possible danger from that source.

The Commissioner and two inspectors went to Springfield in response to this invitation and spent several days there. With only one exception, the water supply of each dairy was contaminated, and each dairy so affected was required to make a different arrangement, in many instances new deep wells being dug. These dairies scored as follows:

Number of dairies inspected, 31; total number of cows, 708; number milking, 615, producing 973 gallons daily; each dairy averaging 22.84 cows; average number milking, 19.84, producing 31.39 gallons daily, with an average score of 49.21.

Some time since, this department appealed to the Federal Government to secure help in the matter of inspecting the milk shipped into St. Louis from southern Illinois. An astonishing result was found in the matter of cleanliness in this milk. For example, according to the report of the United States Department of Agriculture, as high as 200,000,000 bacteria to the cubic centimeter—relatively a quarter of a teaspoonful—were found. As high as 1,000,000 of the Coli group, which is the bowel germ and is an indication of the presence of typhoid, were found. Also, as high as 1,000,000 of the streptococci or pus germ, were found.

This latter indicates the presence of pus in the milk and undoubtedly comes from tuberculous infected udders.

I have mentioned in a former report that about 160,000 gallons of milk are consumed each day in St. Louis, of which 90 per cent came from southern Illinois. On account of conditions found, an order was issued requiring all the large distributors of Illinois milk to pasteurize the same before selling to the consumer, the effect of the pasteurization being to kill the germs making the milk safe to use, although not having the best flavor.

It is evident that the Missouri farmers are overlooking a fine and profitable opportunity having such a splendid market within the State. It shows also that the dairies producing this milk are not as clean as they should be. This examination was apparently made for cleanliness alone, as we found out of five hundred samples taken during the fall that much of this milk from Southern Illinois contained both formaldehyde and added water. The Commissioner made a trip to Chicago to enlist the assistance of the Illinois Commissioner with a view to eliminating this adulterated and dangerous milk. Through the courtesy of the Illinois Commissioner, four inspectors were furnished, and these, together with two of the inspectors of the Food Inspection Department of Missouri, have been making for the last five weeks a careful inspection of all milk shipped into St. Louis at the point of shipment. It is believed that the milk situation in St. Louis in the last two years has improved at least 50 per cent.

In the last four years, during the incumbency of the present Commissioner, ten additional creameries have been built in Missouri, averaging at least 300 pounds of butter per day each, making 3,000 pounds per day manufactured in Missouri and worth not less than an average of thirty cents a pound. In other words, there has been added to the income of the Missouri farmers in the last four years about $750 a day each of the 365 days; or in round terms, not less than $273,750 has been added to the wealth of the farmers in Missouri in the last year, more than they received four years ago.

I believe this is the result of constant dairy agitation, through dairy trains and lectures. At Mountain Grove, for example, the manager of that creamery told me that in the month of August he paid as high as $1,100 a day for butter fat in his creamery, and he asked that I run another dairy train this winter, as he believed that was the cause of the increase in dairying. This he told me when I spoke on dairying at the Mountain Grove Agricultural Fair.

As an interesting example of what can be done in the dairy business on indifferent land, I have the information from the man himself, Mr. Turner Proffitt, who lives twelve miles from West Plains, his nearest railroad town, that he received in one year from butter fat $1,177, $833 for hogs and $500 for hay, making a total income of $2,510 from 240 acres of land, which he originally would have been glad to have received $25 an acre for, and for which he now says he would not accept $65 an acre. He sells the butter fat, feeds all the skim to the hogs, grows only enough grain for his silo and grain-feeding, the balance of the land being in grass, cowpeas and cane. He also sells some hay. He considers that the cow has made him the difference between $25 and $65 an acre in the length of time he has been in business.

Another instance is that of W. M. Breedlove, seven miles from West Plains, who has 129 acres of the same kind of land and milks sixteen cows. His income from these cows and land in one year was $480 for butter fat, $300 for hogs and $120 for hay, making a total of $900 from sixteen cows and 129 acres.

He says since building his silo that he is enabled to grow all the feed necessary for a balanced ration for his cows and expects to increase his profits. He is building a fine barn besides a silo, and claims to be making as much money again as ever before, and will increase his herd to thirty cows.

The Commissioner has been having considerable difficulty late in the fall with some parties in the State manufacturing so-called "moonshine" butter. This is made up of renovated butter stock to which has been added gum tragacanth, which has the faculty of absorbing a great deal of water, the chemist in Springfield where this butter was sold finding as high as 50 per cent moisture in the sample. This is a dishonest practice, as it is unfair to legitimate butter makers, who are not permitted under the law to have more than 16 per cent moisture in their butter. The cases were prosecuted. More prosecutions are pending, and the Internal Revenue Department of the government has been notified. About 2,300 pounds of this stuff was held up by the department.

In the way of recommendations, an antidiscrimination law should be passed by the Legislature requiring creameries to pay the same price for butter fat wherever they buy in the State, the object of this being that it will make it impossible for a big institution to go into a new field and crowd out a small creamery by paying more for butter fat, and reduce the price at another point where they have no competition.

Our neighboring states have a license law which is a source of income to the department, requiring each man before buying cream to take out a license and pass an examination as to his fitness. This enables the Dairy Commissioner to keep in touch with dishonest buyers, and put them out of business whenever they break the law. The law requires them to have a license, and yet gives the department the right to revoke a license for inefficiency or dishonesty. I believe these two laws would be a source of great help in building up the dairy interests of the State.

Respectfully,
W. P. CUTLER,
State Dairy Commissioner.

REPORT OF APIARY INSPECTOR.

Gentlemen of the State Board of Agriculture:

M. E. Darby.

In presenting this sixth annual report as Inspector of Apiaries I will very briefly state apicultural conditions of the State, give number of colonies inspected and make some recommendations for the betterment of this work.

The seasons of 1911 and 1912 were very favorable for the development and spread of foul brood, the greatest enemy to bee culture in this country, and the losses caused by it in some localities have been very discouraging, yet the work of eradicating disease has been very satisfactory in localities where it has been properly looked after. It has been impossible for me to carefully go over all the territory that has been visited by this destructive disease.

Of the 3,800 colonies inspected during the season of 1912, about ten per cent were found to be affected. Foul brood has been discovered in thirty-one counties and is believed to exist in several others. Fifty counties adjoining these are likely to become affected at any time, nor is the trouble likely to stop with territory in closest proximity. It can be carried in many ways and for long distances, and start up its destructive work in unexpected places.

In some of the places reported, the diseased territory is yet small, and with proper management could be prevented from spreading further, but unless more help can be had in the work of fighting disease, it will be a question of but a few years until our bee industry is practically wiped out. One man alone cannot do this field work, and at the same time keep up the work of education that is necessary to make the work of inspection the success it should be. There is a growing demand for instruction in the care and management of bees, and some provision should be made to supply this demand.

To meet the conditions as they exist and render the service needed, a larger appropriation should be secured for this work. Some provision should be made for deputies who could be called into service when needed. The Inspector should be employed on a yearly salary instead of by the day, and his duties should cover the apicultural field. This would give time for preparing bulletins, attending beekeepers' meetings and looking after various phases of educational work during the winter months when other work stops. A vigorous and determined effort to control foul brood should be made during the next two years, and for this purpose an appropriation three times as great as the one we have been receiving will be needed. After the two years' work is ended the situation should be so improved that a smaller amount would be sufficient to carry on the work. The apicultural interests of the State are in such a condition that this additional help is needed for its protection.

I earnestly ask your honorable body to take this matter up and make recommendations for a sum sufficient to protect this important branch of agriculture from the ravages and ruin of disease.

Respectfully submitted,

M. E. DARBY,
Apiary Inspector.

Report of Missouri Farmers' Week.

January 13, 14, 15, 16 and 17, 1913.

Third Annual Meeting Missouri Saddle Horse Breeders' Association, Third Annual Meeting Missouri Cattle Feeders' Association, Third Annual Meeting Missouri Association of County and District Fairs, Fourth Annual Meeting Missouri Farm Management Association, Fourth Annual Meeting Missouri Draft Horse Breeders' Association, Third Annual Meeting Missouri Women Farmers' Club, Sixth Annual Meeting Missouri Home Makers' Conference Association, Twenty-Third Annual Meeting State Dairy Association, Tenth Annual Meeting Missouri Corn Growers' Association, Organization Meeting Missouri Country Life Conference.

(Conducted under the auspices of the State Board of Agriculture.)

FARMERS' WEEK
HELD UNDER AUSPICES
STATE BOARD
AGRICULTURE
AGRICULTURAL
COLLEGE
COLUMBIA
JAN. 13-17, 1913

The most successful Farmers' Week meeting in the history of Missouri was held in Columbia January 13, 14, 15, 16 and 17, 1913. The enrollment, exclusive of citizens of Columbia, reached 1,583, or more than 200 over that of 1912, when local people in attendance at the meeting were also registered. It is safe to say that with citizens of Columbia and students of the College of Agriculture, not less than 2,500 persons attended the meeting.

The four days' short course put on by the College of Agriculture, which institution joins heartily with the Board of Agriculture in making the week a profitable one for all visitors, was the strongest and most practical yet offered.

As is generally understood, Missouri Farmers' Week is really an association of associations. Each year one or more new organizations are added, so that the week becomes one of constantly increasing importance and interest. The old associations participating in the 1913 meeting were: Missouri Saddle Horse Breeders' Association, Missouri Cattle Feeders' Association, Missouri Association of County and District Fairs, Missouri Farm Management Association, Missouri Draft Horse Breeders' Association, Missouri Women Farmers' Club, Missouri Home Makers' Conference Association, State Dairy Association and Missouri Corn Growers' Association. In addition to these, there were organized the Missouri Country Life Conference and the Missouri Cattle, Swine and Sheep Feeders' Association. The Missouri branch of the National Poultry Association also held a meeting in Columbia during Farmers' Week, and the Boone County Poultry Association, following an established custom, held its annual show at the same time. A horticultural meeting, with a midwinter apple show, was another attraction of the week.

An entirely new feature of Farmers' Week was the Missouri farmers' ham and bacon show. The State Board of Agriculture had appropriated $100 in premiums, and the result was a most creditable exhibit of the kind of meat for which Missouri farms are famous. The official Farmers' Week badge, one of each being presented to each visitor who registered, was designed with the idea to give further publicity to this meat show. Suspended from a metal medallion, on which was shown the State seal, ears of corn and appropriate lettering, was a miniature ham.

The State corn show was probably the best in the history of Missouri. There were many entries and the quality of the corn was excellent. Premiums were also awarded on wheat and oats.

The exercises were concluded Friday night, when some five hundred farmers enjoyed the annual banquet prepared under the direction of the Agricultural College. Most of the bill of fare was made up of meat, vegetables, ice cream and other good things from the State farm.

An effort has been made to secure a full report of the proceedings of the week. With many meetings in progress at the same time, this is practically impossible. However, the report as printed on the following pages is more complete than that of any previous year. For this we are greatly indebted to the secretaries of the various associations and to the faculty of the Agricultural College.

ADDRESS OF WELCOME FOR THE COLLEGE OF AGRICULTURE.

(Dean F. B. Mumford.)

Dean Mumford.

The Mayor of Columbia has extended to you a welcome on behalf of the city, welcoming you to the homes of our people; the president of the Commercial Club of Columbia has extended to you a welcome on behalf of that organization, recognizing your importance as an aid to commerce, but it is my peculiar pleasure to welcome you to the College of Agriculture, and on behalf of my colleagues in that institution, to extend to you a cordial invitation to examine the work that we have been doing, and to aid us by the inspiration of your presence in carrying forward the numerous projects in which we are engaged. I judge that those of you who are present here do not belong to that class of farmers who shy at "book-farming." I remember at one time a neighbor of mine owned a horse that was in the habit of shying at some visible objects and some unseen, and the veterinarian told the owner of this horse that it was not a nervous disposition as he had supposed, but there was some defect in the vision—there were spots in the eyes which caused this horse to shy. Now, I hope that you do not belong to that class of farmers who shy at book-farming, and I am led to believe that a great many here tonight do not belong to that class.

One of the most gratifying things to those who have charge of the arrangements pertaining to Farmers' Week is that we see the same faces year after year coming back to the short course in agriculture. It is not my intention to go into the details as to the work we are doing. I hope that the material evidence that you will see here during your stay and the work we are doing will commend itself.

The College of Agriculture, among educational institutions, is peculiar in this: There are more farmers in Missouri than any other single class of people, and perhaps more than any other half a dozen classes combined, and yet there is but one institution organized to solve the problems that confront the farmer. There is but one institution, the College of Agriculture, that is organized for the purpose of training men for agriculture as a vocation. The responsibility that you have imposed upon us is therefore great.

I want to say just a few words about the plan of our work during the week, which you will find outlined to some extent in the program. Study these carefully, decide what you want to hear most, be there promptly, and get all you possibly can out of the lectures and demonstrations. If we can be of assistance to you in any way, do not hesitate to call on us. That is what we are here for.

The purpose of the short course offered during Farmers' Week is to bring to your attention some new discoveries and modern ideas in agriculture. We are trying to give as much practical instruction as it is possible for us to crowd into the four days, and you will have an opportunity while you are here to become personally acquainted with the many teachers in agriculture. The short course has another purpose, and that purpose is to demonstrate to you, as far as we are able, the work that we are doing. We have thrown open for this week all of the laboratories, the classrooms, the lecture rooms, the libraries, for your use, and we have invited you to ocupy the seats that are occupied by the eight hundred agricultural students who are now enrolled in our institution, and to secure as much information as possible, and at the same time to get into the spirit of the new agriculture.

We also have another purpose in mind in this farmers' short course, and that is to bring to your attention by personal lectures and conferences the results of the investigations carried on at the Agricultural Experiment Station. It is possible to conduct investigations of great value and fundamental significance, to publish them in our bulletins and send them out to the farmers of Missouri, but we are beginning to find out that the publication of an important fact is not alone sufficient. We have come to believe that demonstration and the carrying on of the results of our investigation by word of mouth and by personal demonstration to be the most important method of bringing about a change in agricultural practice.

In closing, I want to express to you our very great pleasure in your presence here, your interest in our work, and back of it all and more important than all, the deep-seated purpose evident in all who come to Farmers' Week to bring about a better agriculture for Missouri.

ADDRESS OF WELCOME ON BEHALF OF THE CITIZENS OF COLUMBIA.

(Mayor W. S. St. Clair.)

Mr. Gentry spoke with a great deal of pride of being a farmer, but he knew you would not accept it on his word, so he called on Dean Mumford for proof that his claim was founded on fact. President Gentry is a city farmer. I claim to be a real farmer. I farmed in the days when farming meant something, when you could take a dollar and buy something, when you could get out and buy thirty pounds of hog for a dollar and when the great majority of people could have butter on the table and could have eggs now and then, but I am reminded tonight that I have had it in mind for a long time to call just such a gathering as this in Columbia. I have been wanting to have a conference with the farmers of Missouri on this very matter. I am glad that you are here, gentlemen, and that your wives are here, for I have an idea that they take a very important part in the farm life on the farms that you operate, and I want to ask you in behalf of some of our people in Columbia to take some of these matters of high prices under advisement, and see if you cannot do something to help us.

When I was in the country I wanted things high, but now that I am in town I want things low. If you can just get butter down and eggs down and meat down where we can have some of these things once or twice a week, we will feel that your visit in Columbia has been to some purpose. I am told, ladies and gentlemen, that outside of the honored president of the University and the heads of the respective departments here, there are thousands of these professors who don't know what it is to have butter and eggs on the table. I want something done for them and for the rest of our people.

We are certainly glad to see you here. It is a great pleasure to have you in Columbia. You have been told so many times that the farmers are the best people in the world that you have come to believe it, and we have let it go at that. You are a splendid body of people, and we would rather have you with us than many other conventions we might mention. Many of the organizations that meet here are made up of city people, who know so much that they ought not to know that they make trouble, but we know that you are here for business, and that you are going to have a good time and a profitable time, and go home and make better farmers.

Columbia is the greatest town in Missouri; in fact, we have long since given it up that it is the best town in the world. It has everything worth having—and lots of things not worth having; we have everything here. We have everything that you want and lots that you ought not to have, and we want you to take what is best and enjoy yourselves while in our city. Columbia, with its big poultry show, with its beautiful homes, with its well-improved streets; Columbia with its slippery streets and slippery people; Columbia, with its magnificient railroad terminals, bids you a hearty welcome.

AN ADDRESS OF WELCOME ON BEHALF OF THE COLUMBIA COMMERCIAL CLUB.

(Hon. N. T. Gentry.)

N. T. Gentry.

It is true, as stated by our presiding officer, that I graduated from the College of Agriculture of the Missouri University in 1884, but I did not practice farming. However, I married a Missouri farmer, and have ever since had great admiration and sympathy for farmers.

It is a pleasure for the Columbia Commercial Club to say "Welcome, farmers of Missouri." The organization to which I belong and which I now represent is composed mostly of educators, manufacturers, business and professional men; but we also have some members who are farmers. I am glad to say that the citizens of this little city and many of the farmers of this county are realizing that they are friends and dependent on one another, and the success of one will result in benefit to the other.

We welcome you because you are from Missouri. Some of you are Missourians by choice and others by birth. And I am sure that the adopted citizens of Missouri ought to be as proud of their adoption as we native Missourians are proud of our nativity.

If there is one word of criticism that I might with propriety indulge in, it is that many Missourians are not as loyal as they should be to this State. I admire the people of New York, the people of Virginia, the people of Kentucky and the people of California for the loyalty displayed by them at all times to their respective states. And I am one of those Missourians who believes that there is nothing too good for Missouri. Missouri should have the best of churches and the best furnished churches, the best schools and the best equipped schools, and the best homes and the most conveniently arranged homes. And Missouri farmers ought to be the best and most scientific farmers, because Missouri farms have the best and greatest variety of soils of any state in the Union; and the success of Missouri is dependent upon the success of the Missouri farmers. Unfortunately, too many of our farmers have neglected the matter of agricultural education, and have neglected to improve their opportunities. But when I see this magnificent gathering of Missouri farmers, and when I remember that I saw similar gatherings that were held in Columbia last year and the year before, I can truthfully say and I am glad to say it, that the days of incompetent farming in Missouri are passing rapidly away.

I welcome you because you are progressive farmers. Your presence at this meeting is proof of the fact that you are not satified with what you and your fathers and grandfathers have done, but that you want to go forward. Whenever a number of men get dissatisfied with the quality of work they are doing, and show that they are interested in improving that work, there is a bright future for them. I am glad that our Missouri farmers are making improvement in the matter of live stock, the operation of dairies, the care of soil and the preservation of forests, as well as trying to improve the annual volume of their farm and garden products. It was my good fortune, in the summer of 1911, to go, in company with the members of the State Board of Agriculture and some guests from St. Louis and Kansas City, on an automobile trip across the State in the interest of good roads. Our friends from those cities were surprised at the large number of valuable farms that they saw along the way, surprised to see so many of those farms well supplied with modern improvements, and so many of them in the highest state of cultivation. These people from the cities knew that other states had fine farms and progressive farmers, but they were quite agreeably surprised to know that Missouri had so many progressive farmers, that they were interested in the good-road movement, and that they were keeping step in every particular with the farmers of every other state.

I welcome you, finally, because your mission here is to a large extent an unselfish and patriotic one. You are here to get information that will aid you and which you will take home to your neighbors. I know what it means for farmers to leave home in the midst of such stormy weather in January, and travel the distance that many of you have traveled in coming to Columbia. It means sacrifice, inconvenience and present loss. Missouri can congratulate herself that she has so many farmers of the progressive type who are willing to brave the snow and zero weather in order to avail themselves of this meeting. But I am sure that the interesting and instructive addresses to be here delivered by some of the leading educators and agricultural scientists of our State and of our nation will fully repay you for making this sacrifice.

We sincerely trust that your meeting here will not only be a pleasant and instructive one, but that you will thoroughly acquaint yourselves with our State University, and especially with the agricultural department. And, while we are making the schools all over the State of proper size and furnishing them as they should be furnished, let us, indeed, make the Missouri University and the Agricultural College what we so often call them, "the capstone of our educational system." I hope and I believe that the day is not far distant when the Senators and Representatives in our General Assembly will not only make liberal appropriations for our eleemosynary institutions, but that the value of education, and especially of agricultural education, will be so highly appreciated that everything will be procured that money can get to give the Missouri farmers the best of education and give it to them on Missouri soil. I believe the farmers who attend these annual midwinter meetings have it in their power to exert sufficient influence over the lawmaking body that will result in giving Missouri farmers what they should have, the best that the land affords. I am sure that the lady farmers will work for higher agricultural education; and if the men will work in season and out of season for the betterment of farmers and of farm life, as do the women, the "poor farmer" will be supplanted by the up-to-date farmer.

I recently heard a story told by President H. J. Waters of the Kansas Agricultural College, whom all Missourians hope will be Secretary of Agriculture under President Wilson. The story is on a Mississippi farmer. This farmer was awakened each morning by the ringing of the bell of an alarm clock that was made in Connecticut; he dressed himself in clothes that were made in New York; he sat down to a table that was made in New Jersey; he used table linen manufactured in Massachusetts, and he ate breakfast food that came from Michigan. After breakfast he hitched up a pair of Missouri mules to a wagon made in Indiana, and he cultivated his fields with a plow that came from Illinois. During the day he smoked Kentucky tobacco out of a pipe made in Virginia. At night he retired to a bed that was made in Pennsylvania, and he covered himself with blankets that were made in Ohio. After such a day's experience he could not sleep, but laid awake and listened to the barking of a dog, the only home-grown product of his Mississippi farm. I sincerely hope that nothing of that kind occurs in Missouri, but that Missouri farmers patronize Missouri business institutions, and that the business and professional men of our commonwealth patronize the products of Missouri farms.

The Columbia Commercial Club has for its motto the name of one of the prize steers that we purchased from the Agricultural College and butchered for our annual dinner two years ago; that animal's name was "Ever Onward." And so I hope that the Missouri farmers, the members of the various industrial and commercial organizations, the business men and the professional men of Missouri will, in all things that tend to help and uplift our commonwealth, move ever onward.

Ladies and gentlemen, I join with Mayor St. Clair, with President Hill, with Dean Mumford and with all of the members of the Commercial Club, and with all of the citizens of Columbia and Boone county in extending to you a cordial welcome and in wishing for you a happy new year—yes, happiness and prosperity greater than you have ever before enjoyed.

RESPONSE TO ADDRESSES OF WELCOME ON BEHALF OF STATE BOARD OF AGRICULTURE.

(P. P. Lewis, President, Crescent, Mo.)

P. P. Lewis.

It is a great pleasure to me to answer to the words of welcome to the farmers of this old State this evening, and I come here filled with a great deal of pride. I remember as a boy, yea, as a young man, when walking down the streets of the city in which I lived, if recognized at all it was by the street gangs as you call them, in their remarks that you have probably heard, with a finger of scorn pointing to me and saying, "There goes a hayseed. Look at him. He hasn't got the mud off his shoes." I have watched the development of the fine farms all over this State of which I am so proud; I have seen the steady growth of the homes on the farm and the uplift of the farmers; I have witnessed these things which have made a greater State, and my heart has been filled with pride. I have been made glad that I am a farmer, but when I heard the humble plea of the mayor to furnish him with eggs at something like a reasonable cost and meat that was fit to eat, my heart melted.

Fellow farmers, I want to say to you tonight that the welcoming addresses that you have just heard are but the echoes of the great harmony of voices all over this and other nations that are calling to you. We amount to something in this grand march of progress in the world. A few years ago, like the boy I mentioned, we were not noticed, weren't appreciated, and we hardly knew ourselves. We didn't appreciate ourselves and in being asked why the boy left the farm, I have thought over the question carefully and I thought the whole thing was this: He left because the farmer had no respect for his occupation or calling, but since he has heard the holy call he has lifted his head and looked the world in the face, and his boy has been made glad by looking upon a new farmer.

I remember the farm of years ago when the mother carried water from the spring a hundred yards or more, and where she milked an old poor cow, perhaps in a cold shed in the winter time, or more often with the beast backed up in the corner of a rail fence. Is there any wonder that the boy left that condition? But a change has come over the spirit of that kind of thing until the mother, as she rightly deserves, is a very queen among women. Oh, that my mother could have lived to see the day!

Now, fellow farmers, to you not alone is due this great uplift. We owe it to the men in our educational institutions, in our colleges of agriculture, all over this broad land, that they have seen fit to put out their hands to us by experimental work, by persuasion and kindly reasoning to look up to better things, and they have helped to develop the country as it has never before been developed. They have helped to make the home brighter. I am proud to do them honor. Don't you see how humble I am? If I were called upon to name some of the heroes who ought to be and will be enrolled on history's page, I would call the names of those who have been working for years and years, and I would go back to Mendel, Burbank and others.

The town would not amount to anything if it were not for the farmers. No wonder they are bowing to us in humility tonight. Prof. Eckles told me a short time ago of a work that he has done here at this College of Agriculture, developing the power of prepotency and the value of an animal at the head of a dairy herd. Others in other departments are doing work of similar importance. And do you know, my friends, that when Dr. Hill paid the farmers his tribute and said what the farmers would do, I was glad that I have been a farmer, trying to do things, for several years. Once or twice I have felt I was losing a little prestige by it. A short time ago I was making a speech in a southern county, and during a short interruption in my talk a grizzled farmer walked up to the platform, stuck out his hand, which I gladly accepted, and as we shook hands he said, "Doctor, how are you?" I was hardly able to talk to them any more, fearing they would lose confidence in me.

I plead with you tonight to carry the message to your neighbors and friends; impress them with the truths that are being developed for their cause and ours. Let us with one accord stretch out our hands to our friends everywhere and point them to the fact that they can have information at no cost to themselves, no dishonor to themselves, no disgrace to themselves, just upon application. If they will but apply to the University they can have truths that will cost them nothing and cause them to look higher on their own occupation. We have been too prone to believe ourselves mere "clodhoppers," but in this era of instruction or education, in this uplift of the farmers, let us look at ourselves as practical scientists upon whose shoulders the feeding of the multitude rests. Let us assume this great responsibility and carry it with our heads uplifted. Let us apply in our own homes the results of the investigations of our servants here at the College of Agriculture and elsewhere, and make for ourselves a better place in which to live.

I heard, when I was a boy at my father's fireside, that the best place to raise a boy honestly was on the farm, and I know it to be a truth. Today, as never before, the best place to raise a boy or girl is in the country, on the farm, in the farmer's home. I ask no better thing for my children than that they shall have a home on the farm, under the conditions that are made possible by the work that has been going on for these several years in the interest of agriculture. I am sure that they will be happy, that their lives will result in good to those who come to their homes and with whom they are associated; and finally, when they have the call, as their fathers have had, they shall not have lived in vain, for God never put a man into this world to live like a vulture, just to live and to die, but he put us all here with a great privilege, and that privilege is to develop and leave the world better for us having lived. Money, except where used for the development of the best things in the world, never made the world much happier. Men cannot eat it. If they could, many would have died of indigestion.

Again, I want to thank the gentlemen who have welcomed us tonight, and I assure them in your behalf and mine, that we appreciate their kind words. We shall go away glad that we have been among you, and we hope to come again.

ADDRESS.

(Hon. E. L. Newlon, Lewistown, Member Board of Agriculture.)

It is very gratifying, indeed, to see this splendid audience of Missouri farmers. Not only are we glad to have so many farmers with us each time, but we are glad to have with us from year to year a number of business men. The business men by their attendance at these farmers' meetings are indicating that they are taking an interest in the welfare of the farmer. The great commercial and agricultural and industrial associations are realizing the fact that their interests and the farmers' interests are so closely allied that they are working hand in hand for the common good. Working along with these and taking the

E. L. Newlon.

lead is the State Board of Agriculture. Through its different departments it has been a pioneer in the building of good roads, the making of better farmers and the training of better men and women.

The first farmers' meeting, annual Farmers' Week, you have been told, was held in 1906. At that meeting there were three State organizations represented. At this meeting today, only seven years later, you will find something like a dozen State-wide organizations represented. The growth of these organizations, the growth of Farmers' Week and the interest that is being taken all over the State in the building of good roads, the making of better farming, all seem to indicate that the spirit of progress which has seemingly lain dormant so long in Missouri is at last springing forth into new and renewed life. I venture the assertion that never again shall it be truthfully said during a census period of ten years that the rural population of Missouri had actually decreased. I hope it will not much longer be said that the average production of corn in Missouri is ever less than 30 bushels per acre. I believe that the Missouri farmer is wide-awake and alert, and that the time is not far distant when the production of corn in Missouri shall be nearer 50 bushels than 30 bushels per acre.

I think that one of the institutions that is going to help as much as any other in this better farming is the employment of agricultural advisers in each county in the State. This, however, is a movement that is new and will have to be tried out with caution, but I think the time is not far distant when nearly every county in the State will have in its employment such a man.

We are living in the dawn of a new era. It is an age of better farming—scientific farming, if you wish to call it that—an age of modern farm homes that will help to keep the boy and girl upon the farm—an age of better roads, even permanent highways crossing this State in every direction. All of these things will mean better educated, better trained and more contented citizens.

Again, we are glad that you are here. We want you to stay with us the entire week, attend every meeting, get all the good you can out of the talks, tell the rest of us all of the good things that you know, and stay for the banquet. After going home, put into practice the ideas you have gleaned here and which will be profitable and of practicable benefit to you. Tell your neighbors of the good things of Farmers' Week, and don't forget to "boost" all the time. Boost for better farming, better roads and a better Missouri.

ADDRESS.

(Hon. Fred T. Munson, Osceola, Member Board of Agriculture.)

F. T. Munson.

I have long been dissatisfied with the usual formal manner in which one is supposed to address an audience. "Fellow citizens" has a sonorous sound and is a fine, mouth-filling phrase, but there may be men in the audience who are from New Jersey—or some other foreign country—and hence it would be inappropriate.

"Ladies and gentlemen" sounds all right, but suppose there are men in the audience who are not gentlemen—they might be offended.

Now, there are certain salutations which are appropriate for given occasions. For instance, if a minister wishes to address his flock, it would be all right for him to say, "Brethren and sisters," but would it not be better for him to say "Fellow sinners?"

Suppose a Republican wished to talk to an audience of Republicans—it would be perfectly proper, under ordinary circumstances, for him to say "Fellow Republicans," but they are so scarce this year that the phrase would be meaningless; why, I am told that in California and the Dakotas they are trapping them and putting them in museums as curiosities—and I am a Republican.

"Fellow Democrats" sounds well, but did you ever notice that the orator always hangs his head, as if he was just a little ashamed of himself when he says it, and then he does not know this year whether he is talking to Reactionary Democrats, Progressive Democrats, or just common Democrats who have inherited their politics.

A Socialist should always address his audience as "Fellow sufferers," for that will be their condition by the time he gets through with them.

If a suffragette is to address a bevy of "suffragettes" it will not be necessary for her to make a formal introductory address. She will have plenty to say without that—being a woman.

But when I am talking to a cosmopolitan audience like this, made up of all grades of society—bankers, capitalists, investors and money grubbers; then, on a plane a little higher than they, the men who mold public opinion, the newspaper men and correspondents, and others in like position; then, still above them in the scale of usefulness, the ministers of the gospel, and in the same rank these devoted men, presidents, deans, professors and lecturers, who are devoting their lives and talents to the upbuilding and uplifting of their fellow men; but above all, standing on the very pinnacle, representing the highest type of American and thus necessarily of world's citizenship—the honest, hard-working, God-fearing Missouri farmers.

So in addressing an audience like this, I feel like dropping all formality and simply saying, "Hello, boys! Howdy, girls!" It seems to bring us closer together, as it were, raises me up to the level of the audience and enables us to talk face to face; for I want to assure you, my friends, that I am going to talk and am not going to make a speech. I shall not do so for fear that I might be caught in the predicament of a friend of mine who was a member of his local school board and was in the habit of occasionally making the children a talk. Being fearful of fire, he usually talked on the subject of fire drills, and always asked this question, "Now, children, what would you do if I were to tell you that the house was on fire?" The children were taught to give a stock answer in concert. On one occasion, however, my friend wished to talk to them on another matter, and thus addressed them: "Now, children, what would you do if I were to tell you that I am going to make a speech?" The children answered in unison, "We would quietly rise, form in line and leave the house as quickly as possible."

We are engaged in a great work in this State, and though the struggle has been long and at times discouraging, the march of progress has begun at last and we are beginning to get results. One of the indications of the changed sentiment in regard to the importance of the farmers to the community was clearly illustrated today. Across the street, as we came up from the depot of the "Katy" railroad, we saw suspended over Broadway a banner on which we read the words, "Welcome, Mr. Farmer," and on all sides we were met with smiles and greetings until we really began to feel that we were of some importance in the world.

Most of you can remember when only a few years ago if a crowd of farmers were seen straggling along through a town, on all sides we would hear the cry, "See the hayseeds," or "Hello, clodhopper; got your chores done yet?" and other such alleged witty remarks. But I want to say right here that I am afraid that certain men whom I will not name are masquerading as farmers, when in fact they are not farmers but agriculturists. Now, the trite definition of farmer and agriculturist is as good now as it was fifty years ago. "A farmer," it is said, "is a man who works his farm, while an agriculturist is a man who works the farmer." So

I would suggest that we examine carefully the history of those who seek to gain entrance to our ranks, and if thought necessary, that we inspect their hands to see if they bear the signs of honest labor, if they have callouses on their hands.

A great work awaits the investigator, the man who delves down into the hidden secrets of the soil and by patient investigation and careful analysis is able to tell the world by what methods the best results may be attained, what seeds to plant on certain soils and what are the best plans to pursue in the cultivation of crops and for the saving and utilizing of the same after they have been produced. Interest such as has never been exhibited before is being taken in the work of the College of Agriculture and the activities of the Board of Agriculture and the splendid attendance here at our annual Farmers' Week should be and is an inspiration to those of us who love our State and sincerely wish for her advancement until she occupies her rightful place in the van of all of the argicultural states in the Union.

Let us remember that scientific, progressive farming is in its infancy; that as yet we have only mastered the rudiments, and that there is a vast, yes, I might say, an illimitable field of endeavor awaiting the researches of the earnest student. So we must not cavil at the apparent slowness of the movement. All great achievements are the result of years and sometimes of centuries of diligent labor, and are often successful only at the cost of blood and treasure. Remember that the inspired poet said:

"Heaven is not gained by a single bound;
But we climb the ladder round by round."

Today there is an awakening along the lines of morality, honesty, sanitation and a general improvement such as the world has never before seen. From every city, hamlet, village and farm comes the cry, "Help us to improve our condition, send out from your schools and colleges men who are trained in the right methods to teach us."

Everywhere we find this sentiment. It may be down in the land of the green glade and the leafy bower where the humming bird hovers and the cricket chirps; down, low down in the valley, where the red bird flits and the child loves to play; high up on the glistening crags of the Ozarks with their barren crests towering among the clouds, where the storm king finds his home and the forest bows its head to his fierce onrush; far out on the broad beautiful savannas of the Northland where the rustling blades of growing corn and the swaying heads of ripening golden wheat form the music and the summer wind singing among the trees swells the chorus; in the mighty stretches of low-lying land in the Southeast where for untold ages the forces of nature have been steadily at work preparing a soil inexhaustible in its richness and only needing the hand of competent, educated men to transform it into a veritable Cave of Aladdin. All these elements are being gathered together, and the result is told in one grand triumphant anthem of progress, prosperity and achievement.

We all love our State. We recognize that each part of it has claims that deserve recognition and that no one portion has the right to assume superiority over another, but I have sometimes thought that residents of portions of the State rather "put on airs" and assumed that theirs was the only really important section. I have decided (since I have the solemn pledge of the presiding officer that I will be protected from personal violence, or, in other words, that I will not "get the hook") to repeat a little poem. The words to which I invite you to listen show that we of Southwest Missouri, have not only a splendid fertile country, diversified, prosperous and happy, but we have in addition something that leads away from the sordid affairs of life, enables us to relax a little and allow our minds to assimilate some of the beauties of nature. It lets the imagination have play so that the normal balance may be maintained, out of which conditions alone, a mingling of the practical and the ideal, can be evolved the highest type of manhood and womanhood.

Oh, the mystical river, its surface aquiver,
With lights and dark shadows which gladden the eye;
And the soft summer breeze, moaning down through the trees,
Seems to rhyme with the notes of the whippoorwill's cry.

And the damp, heavy air has a fragrance as rare,
As if bathed in the odors of tropical wine;
While the soft ebb and flow of the waters below
Fills the broad fertile valley with music Divine.

So I lie there and dream, on the banks of the stream,
As the waters go murmuring, whispering by;
And the sycamore tree casts a spell over me,
With its gray mottled trunk and its crest in the sky.

And each rocky shelf seems the home of an elf,
That watches the river with vigilant care;
And the old blasted pine, with its garland of vine,
Seems a sentinel placed by Omnipotence there.

And the dark shady nooks, the clear running brooks,
The smell of the walnut, the hum of the bee,
And the low-hanging clouds, with their feathery shrouds,
Seem to shut out the world from the river and me.

Oh, I love it the best when its bosom's at rest,
Its surface unruffled by ripple or wave;
As it goes slowly down, past the forest and town,
It is then that I love in its waters to lave.

But I love it the more when its wild torrents roar,
When it rages and snarls like a lion at bay;
When it sweeps o'er the brake, leaving death in its wake,
It is then that I yield to its masterful sway.

* * * * *

'Tis a type of our life, with its peace and its strife,
With its seasons of rest and its struggles of rage;
When my summons shall come, may I find my last home
'Neath the cool, quiet depths of the Bonnie Osage.

THE RURAL CHURCH PROBLEM IN AMERICA.

(Rev. Clair S. Adams, Decatur, Illinois, Field Assistant, Department of Church and Country Life of the Board of Home Missions of Presbyterian Church.)

Rev. Adams.

I am glad to be with you tonight, and I think it is in perfect keeping with the intention of the organizers of this Farmers' Week that they begin the first night by calling your thought and attention to the things that are not material but to the things which are spiritual and which must elevate the hearts of the men who till the soil. So I esteem it a privilege in that I may hold up to your vision what I believe the country church may do for you who live in the open country. I admit the fact that the church has seemingly failed, but her seeming failure has only been a momentary halt, until she finds herself, and then we will march forward with your help to take the world for our Christ.

It might be of interest to you if I would show you a few charts to illustrate some of the things that are problems before the rural church today. We would be glad to have any of you come up and look them over. The charts explain themselves, and I will take just a few minutes, before I really come to the topic, to give you a little appetizer of what shall follow, by showing you some of the conditions that we have found in taking these surveys. Our church has possibly led out in this department, and for four or five years we have had specialists visiting certain parts of the United States, and getting rural statistics along general lines, such as the economic and sociological which goes to make up the township, the men and women, the education and so on, general statistics of various communities. It will be a pleasure to me, and I trust it will be of profit to you, if I may show a few of these charts. This (showing chart) is a chart prepared by the men and religious movement in that great movement of the laymen of the Protestant church of America that made such a tremendous impression upon the religious life of all of our churches the past year. This shows in colors the general condition of the United States last year when this survey was taken. The black is heathenism in America, the white Protestantism and the red the Roman Catholicism. These figures are drawn and measured on a proportionate scale. And I think we have a right to ask the question, "From this chart can we say America is really Christian?" That is the problem that confronts us in the church, to change the black into the white, and try to drive out the darkness before the light. I think you farmers sometimes get intoxicated with the idea that the cities are growing with such rapidity that you would be led to think there were no people living on the farm. Here (pointing to figures) I have some figures representing the rural and urban population of three decades. Five million people are represented by one inch in these pictures. Coming to 1910, we see that magnificent figure thirteen inches tall representing the 65,000,000 people in America who still live on the farm. See how that compares with the urban figure. You see the rural church has to deal with the larger proportion of the people of America. America may be great as a manufacturing nation, she may be great as a commercial people, but she will always be glad God made these prairies, these marvelous plains, this wonderful fertility of soil; God made it and when he looked upon it he pronounced it good. He meant that this land should become a great agricultural nation, to feed the world as well as shelter whosoever wanted to come.

This particular survey that I was interested in two years ago, and which started my interest in this great work, was taken in that part of Illinois represented by the shady portion of this map in the very richest country of the United States. I have a little clipping in my pocket which tells me of the refusal of a farmer who lived about ten miles from me on an eighty-acre farm who refused $425 an acre for his farm, and some neighbors went on to say how foolish he was. But those people could not see that there are still men in the world that have something above the dollar mark, that still have that old idea of home, the sacred memories and all the blessed relationships that center around that home that cannot be touched by the glitter and glint of gold, and that that one man is only a representative of many other men who prize their home above money, and that when the farm was sold the home would be gone, his dearest place on earth. We honor such a man as that. But in Illinois we are facing a condition that you will come to in Missouri later. Notice (referring to chart) how our population has changed in the last forty years. This little figure represents the tenantry in 1880. But notice how it has increased for the four decades until this last season 52 per cent of the farms of this rich corn belt were in the hands of tenants. Notice how this has changed the country church. There is coming in every rural community a class which is moving, which has no constant home, which is always looking for a farm, and getting out of the farm all that they can; so that between the owner of the land and the tenant who rents only one year and of necessity must raise one-year crops in order that he may get out of the soil what he has put in it, in the form of work, between the upper and nether millstone of these (which I say is the tenantry problem that we have here in America), the soil has suffered by the depleting of fertility. In this chart the large circle represents the entire population of the communities I visited. Notice that the black comprises a large part of that circle. That represents the proportion of the people who are not members of churches in that country so rich and where there are churches in such abundance. This chart represents the four classes of churches and the present condition of the churches, 225 churches in number, which I visited in person. I found out the facts about all denominations. Of the churches in that splendid part of our country I found that 34 per cent have grown in the past ten years; 10 per cent are standing still; 25 per cent of the churches are dying, and 21 per cent of the churches are dead. When I say dead I do not mean those churches that have given up so completely so that the building has been moved away or transformed into a tool house. I heard about an old abandoned church near Decatur which had been sold and made into a hog pen, and the farmer who bought it was the son of the old man who back yonder in the pioneer days, through sacrifice and hardship, built that house and dedicated it to God and that was the church where that man as a boy first learned of the things of God in the realm of the spiritual and eternal. This was not in Japan or in the islands of the sea, but it was here in Christian America. If the same ratio holds throughout the state with the exception of Chicago, as in the places I visited, there would be 1,600 vacant and abandoned churches in Illinois. We have found the same in Missouri. Here is the way the people go to church in the forty-four communities. We will just imagine those old churches are all living again and they are all equal in power to the entire 225 churches. If that were true each church would have 511 people to reach; this would be an average parish. This (pointing to chart), that is in blue represents the church membership. The unshaded portion represents the people who are not going to the house of God, who are not in harmony with the spirit of the church. This diagonal crossed section here represents those who attend. Notice that there is a loss here; quite a good many people who belong to church do not attend church with any regularity.

Here is a chart (refers to another chart) that will reach you Missouri people. Here we have an interesting chart prepared by our investigator as to the costs and incomes in your own State. Here are three hundred and seventy families that were canvassed with the idea of showing the expenditures of the family. This long black strip that goes across the chart represents $771 a year that each one of these families spends upon themselves for the house, clothes, shelter, food, entertainment and other needs of life. This little patch here—can you see it?—represents in the same proportion the amount of money that those same people pay on their school, $14 per family. This small line here represents the amount of money that they expend in the improvement of their roads; it amounts to $6. Can you see that little bit of a line? I doubt if some of you can see it from where you are. This is the place where you have to exercise faith, and faith "is the evidence of things not seen." You cannot see it there, a little line that just represents what these people that spend so much on themselves spend on the church; it represents $3. I had to cut off about six inches of this big strip in order that you could see this last one at all. Here is a map of a section over in the eastern part of the State, and each one of these dots represents a church, here in Missouri, all churches in Pike county, the country churches and the little town churches.

I want to show you right now the opposite of this picture. This one is about preachers and where they live. I want to tell you that absentee pastors of the churches are a detriment. We are trying to get the country pastor on the farm and active in his own community. I was told that in one town there were thirty-three ministers, but that only twenty-three of them were preaching. That must not go on. I was told that the preachers live in one place and preach in another. One lived at a place, I think, that was thirty-two miles away from one of the churches he preached in; I do not remember the other distances, but he lives in one place and preaches in four others. I want to tell you that thing has got to go. Farmers, do you know that you are paying high for the preaching you receive in the church. I want to tell you that in proportion you are paying bigger salaries to these absentee preachers than the city churches pay to their pastors. You pay on an average of $250 a year for a man to come out from some town once a month, in most instances, and preach "at you." Sometimes they live so far away that funerals have to be conducted by the elders of the church. We have got to stop that kind of business if we are going to make Jesus Christ King of our country.

Do you see those lines that look like shooting skyrockets? They represent the distances preachers live from where they preach. See this line up here? That fellow lives away down in St. Louis, and he comes up there (in Northeast Missouri) once a month to preach. And there (pointing to chart) is a man in Vandalia, but the man in Vandalia doesn't preach in Vandalia. There is another fellow from another town that comes to Vandalia to preach, and this Vandalia preacher goes out fifteen or twenty miles to preach. It is estimated by Dr. Wilson that one-sixth of all time taken by country ministers is taken up in journeying to and from their churches. We are trying to group these churches, and it is our effort to solve this problem by having the ministers live among the people. We have taken the churches that can be grouped naturally and that can pay the minister, and we are picking out men that will live among people and stay on the job. We have had so many preachers, that is the trouble, but not enough pastors. When I graduated from seminary about twenty years ago and began preaching I did hope that I would end up in a city church with stained glass windows and a pipe organ and learn to say "eyther" and "nyther;" that was my hope, and my ear was always open to hear the call that would come from the city, and that is the way with nine-tenths of preachers. We are trying to impress and educate the ministers that the young man coming out of the seminary should go to the country—that his place is in the country.

Now, I want to talk to you about this rural church problem. I want to say, first of all, friends, that this is a problem peculiar to America; there is no such problem in the old world. There may have been centuries ago. But there the most beautiful churches you will find are churches out in the country; and the men who have occupied high and prominent positions in their various denominations are the pastors of these country churches. The men who have interpreted the mission of God to man have been men who have been pastors in the country. Think of John Frederick Oberlin, who it is said lost himself yonder in the highlands of France. He led men, nay, whole communities, out of darkness into light. He buried himself for sixty years and transformed the community. And there was Charles Kingsley, that wonderful character, who lived so close to nature. He could not help but live out in God's open country; he was always a country minister. I can hardly repeat here the great names of all men back yonder in the world, but they were not the men who came from the city, but were pastors who lived among the people and built up strong country churches. If I should tell you tonight that the majority of great Americans were men brought up in the country you will realize that this rural church topic is no small problem. One of our pastors recently took a book, published in New York, entitled "Who's Who in America," in which are enrolled the names of living Americans who are doing things, men and women who have already accomplished enough in any line of achievement to be thought worthy of having their names enrolled in that book. This pastor went through that book to find out how many of them were brought up in the country, and he found that 85 per cent of men who now are famous in America—men and women both—were men and women who were reared and brought up on the farm.

If the future is to be as the past, I claim tonight that our problem is a problem of leadership. It is no small problem, because it has to do with 85 per cent of the leaders of America, and if we are to keep them Christians, to keep them with high ideals, with noble purposes, it must be as we minister to them out yonder in the open country, before temptations of the city's wealth are upon them and sweep them from their high ideals. We should impress them for God, back in the open country, in the fertile plains and prairies, out in God's out-of-doors.

Take the temperance question. We are beginning. We are gaining strength and forging ahead. In Illinois for the last few years we have been fighting earnestly through the Antisaloon League to try to get a larger unit on which to vote on this question, on this problem of the saloon. We have the township option; we want the county option; but we have been fought at every hand. Why do we have such antagonism on the part of the legislators from Chicago? Because liquor men know the farmers will vote against them; they know that Bloomington will be free from saloons because the farmers of McLean county are on the temperance side of the question, and it will be the same of Vermillion county, where Danville is situated, and true also of Sangamon county, in which is Springfield, the capital of our state. It will be true of a multitude of cities that in themselves have not the moral stamina to settle these things, but let the farmers of the country vote, and they will drive the enemy of the home and of the Christian church out of the country. And so I say that our reform movements have come from the country and they find their most loyal support there. There are two extremes in civilization—one builds up and the other tears down; one emanates from the mob of the city and the other comes from the pure hills and valleys and from the beautiful plains and prairies of these states that we love and this nation we serve.

Our ministers come from the country, the greater proportion of them. "Uncle Henry" Wallace, editor of Wallace's Farmer, who has been placed at the head of his church in regard to this problem, spoke at their general assembly and asked this question of those present: "All you ministers who have been brought up in the country stand up;" all stood up except two. This illustrates the fact that it is the country to which we must look for our ministers. I do not believe we have gotten to the real heart of the problem as to why so few men go into the ministry, and I do not believe we will arrive at the real answer until we realize that nine-tenths of our ministers have come from the country and in the last twenty years we have been letting the country church die, so that we have been virtually drying up nine-tenths of the fountain heads from which our leaders in church have come.

I will tell you of a discouraged Vermont pastor. His church had not been growing; most of the young men and women had gone to the city, so he got discouraged and thought, what is the use of keeping up the church, why not close the doors. He had heard about the great churches down in the city and what they were doing there, and one year, he said to his wife, "Wife, at vacation time this year, instead of going into the country and up north, let's go to New York City and see some of the work going on there in the big churches." They spent a month in New York. The Sabbath after his return he got up in his pulpit and said to his people, "Beloved, I want to tell you why it is we are working here, why it is God is having us live here. He is doing it in order that there may be elders and deacons furnished for New York City churches." And then he called the roll of men down in New York whom he had met that had come from that little rural church, and who were trained there for God. That is work, and if the highest Christian work is a sacrifice, if the highest service we offer unto God is to minister and not to be ministered unto, the country church stands at the head of them all.

I would call your attention to the change of population. Let me illustrate by something in my own family's history. My grandfather came from Vermont to Northern Ohio, to the old western reserve. In his day that was the west; there was nothing there but Indians. They came in colonies; his brothers came and two sisters and another relative, five families in all. They made that hard and long trip across the mountains and through the woods—it was all mountains and woods at that time—taking weeks and months to make the trip. My grandfather took his bride on such a wedding trip through that district. Well, they were all from the same church, from the same family. What was more natural, then, that in that community—a thousand or two acres that they purchased at that time and settled up—what is more natural than that church should be a Presbyterian church. That was the one they belonged to in the old home. Here another colony comes along; another community springs up and so the churches that have given to the country nine-tenths of the ministers, as I said before, started from such little colonies, from people belonging to different churches. This is all changed now, the homes are broken up, and people moving to town do not ask what church it is the tenant belongs to, but, "Is he a good farmer and has he got the money to pay the rent?" This is one reason why the country church has a real serious problem. Then another reason is denominationalism. I want to tell you something tonight; I believe the devil has had a whole lot to do with the building of some churches. I believe his satanic majesty has been back of some of the business. Denominationalism is putting the church before Christ. There are a lot of people in the United States who have churchianity that is not Christianity. This condition is due to the different contention. "I am right and the rest of you folks are wrong." "I am it and the rest of you are nit." "We are right, we have the Bible." We all have the Bible, when it comes to that; we all love the Bible, but oh! this awful curse of sectarianism. But I am glad we are living when this thing is passing away. I think the day will come soon that we will not have the emphasis on the particular beliefs of any church and denomination preached, but that we will unite upon the great fundamentals of the Christian faith of the past, and in such united service bring the whole world to Him who alone is God; then we will be one in spirit and purpose and plan. You laymen must get back of this movement, for I want to tell you that there is a lot of prejudice against it, against the churches getting together. These divided forces of the Lord Jesus Christ have hindered His Kingdom's growth, and now the churches must unite to save the whole wide world.

I believe we should open our churches more than once a month. I believe the church should stand back of this matter of scientific agriculture. I have been a country preacher for almost twenty years and I want to tell you some of my experience.

I wanted to start a revival in one of my missions, but there was not a professed Christian in the community. It was an old abandoned church, a beautiful one. It had been left an endowment so that the church might be kept up and the endowment was carefully used. The folks thought they would like to have a meeting. I knew they were not greatly interested in a revival, but they were beginning to get interested in dairying. They found that they could sell their cream for a better price in Decatur than they could by making the cream into butter and selling that. And the thought struck me to get a man to come and talk on dairying on the first night of the revival.

My mother was a United Presbyterian and my father was a Covenanter Presbyterian—and that is some combination. I was brought up to think it was wrong to whistle on Sunday. We went to and from the church only on the Sabbath, and made the journey every week. One fall I was twenty-two years old and my brother was pretty near thirty; we were living at home; we were men;

we had voted only a little while before and we didn't think we had to ask father and mother about everything. My brother had just bought a new buggy, and we had some good horses. The roads were fine. New buggy, fine horses, beautiful sunny Sunday afternoon, good roads—just imagine that—and Walter suggested to me that we have a buggy ride. We didn't say anything to father and mother about it. We did not think it necessary. We had our drive, and when we got back they didn't say a thing to us, but the way they looked! And I want to tell you, that that night after we had our prayers together we looked into each other's faces and said, "Just as long as we are together here at home we will accept father's religion." That is the way I was brought up. The preacher would announce that he was going to visit in Deacon Adams' neighborhood, and about Tuesday morning I would have to have my best clothes on waiting for the preacher to come. He would usually come about dinner time, and always somebody had to wait—it was not the preacher, either. We always had chicken the day the preacher came and I had to stand around hungry—and I was so hungry, and that did not increase my love for the preacher a bit. Then after we had eaten dinner we would go into the parlor. Do you remember that parlor with all the curtains drawn down and with the pictures of dead folks on the walls? Do you remember that parlor when you opened it? Do you remember that air that was canned in there from the last time it was opened? It may have been a month or two before, but it was the same air that was in there then after the curtains were drawn; it was a religious duty to keep out of there; only when the preacher came did anyone go in the parlor. You remember that parlor? Thank God they are being abandoned. We would go in that parlor and I would stand up and say my catechism and we would have family worship and the old pastor would place his hands on my head and say, "God bless you Bub," I was just "Bub" to him, not old enough to understand the mysteries of religion. And then after it was all over the preacher would go to the next place and I would run upstairs and put on my everyday clothes and be a boy again. I think they had that idea in that community about the preacher.

The first thing we did then was to start this revival with an agricultural teacher giving us a lecture on dairying; it was a revival—shades of John Wesley! I thought that the old people would topple over. Do you know I had at that meeting so many people that the church would not hold them, and they even looked in the windows. I had post cards sent out besides making the announcement at church, and we had the farmers from all around there, from everywhere. Someone said, "I thought it was a religious service." It was just as much a religious service, I claim, as preaching a sermon, for it was showing God's will to people and how God works along these lines, and everything like that is religious. We have made a mistake in thinking religion is a preacher getting up behind a desk and all the rest of us sitting by like bumps on a log. Well, we started in the meeting with a song—I don't know what it was we sang, but it was something good. After the song I offered prayer and then the lecturer on dairying made a splendid talk and illustrated the different things connected with that subject. I closed the meeting with prayer, and asked the people to come out at the next meeting as we were going on with the meetings. The next night they were back again, and we had a good meeting, and we have had two or three meetings of that kind that have shocked the life out of that old vision, the old idea about the preacher and about the church of Jesus Christ.

And as sure as we have to advocate such things as that we must advocate recreation. Do you know the one thing that drives the boy from the farm? It is the toil of the farm. Do you know that God raised our great inventors to make farming easier? But you are buying improved machinery and working a good deal harder than your fathers did when they worked with the old "armstrong" implements. You have made yourself work harder so as to buy that eighty acres, and there is no recreation, there is no let up. I will be glad when we can have a half-holiday a week on the farm; I believe a farmer's boy would work a great deal better five and a half days out of six days that he works if Saturday afternoon he had that part of the day off to do as he wanted to absolutely. He ought to have, on Saturday afternoon and evening, an outlet for that superabundant energy that is in him. Recreation has been demonstrated to be one of the greatest agencies in the development of character. When you play you have to work together. Baseball has a moral tone to it; you have to lose your personal identity, you have to learn to give and take, and all of these things are the things that help to build up our moral life.

I wish I could go on and tell you what the church of Jesus Christ might do. One time we had some new families come into our neighborhood, and I tried to get them to come out to church, and they would not come. There were quite a number of young people in these families. We needed them at church, we wanted them in the Sunday school, and we thought of a way to get them to come. We had a picnic. And the people of our own community and church were back of it—there is not a good thing anywhere that the church is not back of it—and so I said, "We are going to have a community picnic." Of course, that was a little more attractive than a church picnic. Well, we had our picnic. God gave us a beautiful day. I never prayed more in my life that I might enter into the spirit of that day. And we had races and all sorts of fine games, and you ought to have seen those young people enjoy themselves. I would run and jump and umpire a baseball game. They had never seen a preacher like that. Possibly they said what so many folks say, "He lacks spirituality." I don't know of any way in which God's spirit works, that you and I know a thing about save that He works through something human, a man or a woman. Have you any such idea? I will confess I have not. Well, we had a fine time at that picnic, and at the close—we had brought a little folding organ and hymn books, and these young people who hadn't come to Sunday school, well, we brought the church to them. It was nearly sunset, and I proposed that we gather under a big tree near where we had our games and pleasant times and sing a song or two, and after we had sung one or two pieces there was a hush and I said, "Let us thank God for this beautiful day we have had." So we had prayer and we worshiped God, and thus we closed the day, and I believe it was sealed with God's approval. Do you know the next Sunday every one of the families were represented there, and the Sunday after that, and so on. That old stiffness was broken down, we were flesh and blood after all, and were Christians. I am glad we are over that old idea; it used to be that a Christian couldn't do anything. I remember old Deacon Barns, and mother used to say, "Clair, if you could just be as good a man when you grow up as Deacon Barns." I want to tell you about Deacon Barns. He had a face that looked like an ax, and I never saw him smile in his life. I think he had chronic dyspepsia. I think it would have cracked his complexion if he had smiled. He had all the dignity of a corpse and if there is a thing dignified in this world it is something like that.

I thank God that we begin to realize that the religion of Jesus Christ is a joy-bringing thing into the world. Isn't that what it means? When the Blessed Master was on the way to the cross he turned to his disciples as he was going to the Garden of Gethsemane and said, "Be of good cheer; I have overcome the world." In the Greek that phrase translated means just about "Hurrah" in our language. "Be of good cheer, I have overcome the world."

But beloved, I wish I might go on and tell you of other experiences in making a church minister to a community. In closing, let me tell this story of Henry Grady, that famous editor of the Atlanta Constitution. They tell us that in those days after the civil war when he was making every effort he could to heal the wounds that the war had made that he was very much criticised. Sometimes when he would hear his Southern friends criticise the North very severely for the things they had done he would take their side, and he would be misunderstood by his friends, and when he would hear the Northerners speak disapprovingly of some issues that had been settled by war, settled on the battlefields, he would take the Southern side; and the result was in those awful days of reconstruction he would have to fight many battles alone. His friends deserted him, and the struggle became so hard for him that he locked the door and went back home to Northern Georgia, where his mother was still living in the old mountain cabin, and as he crossed the threshold of the cabin he said, "Mother, your boy has come home to rest awhile; mother, I want you to treat me just like a boy again, and cook for me the things I like; I want to get back again into the atmosphere of the old home." So the mother humored the boy and at night he would kneel down at her side, as he had long ago, and offer his evening prayer, and then the mother would follow him to his bed, just as she did then, and would tuck down the coverlids around the bed, and then she would kneel down and offer up a mother's prayer for the boy, so that the last sound he heard as he went out into dreamland would be the voice of his mother; and so he rested. By day he would go out into the hills, see God's face in the glory of the sunrise; he would see God's beauty in the flowers, in the valleys, in the mountains. And as he rested the vision came back to him, and then he went back in the chaos and in the turmoil of the great things for which he was standing, and he won out.

And so we have so many problems still to solve, so many things for which we are striving, and for which we know not just which way to turn. But let me tell you that the power, the vision, the fountainhead that shall supply the stream of purity, meditation, thoughtfulness, that shall help to solve the problem most, the place where the church and the moral life of America will find the greatest power will be as she goes away from the crowded city, out into the prairies, into the valleys, into the little hamlets, where now and then God's people meet, out yonder in the open where is still the vision of God and His purpose and His power.

CO-OPERATION AMONG FARMERS.

(H. J. Waters, President Kansas State Agricultural College.)

"United to relieve, not combined to injure." (The Motto of the Arlington Cooperative Association.)

A man, a few girls and a cash register, serving meals to a thousand people a day, is the city man's idea of eliminating waste. Allowing someone else to take 55 cents out of every dollar that his products bring while he is content to accept 45 cents is the farmer's idea of business efficiency.

The cost of getting goods from the factory to the consumer has been greatly reduced in recent years by improved business methods. The cost of getting the products from the farm to the consumer has been increased through lack of modern business methods.

High cost of living is not so much due to the high price the farmer receives for his products as it is to the high cost of getting these products from the farm to the consumer. There is no single remedy for the high cost of living any more than there is a sole cause for it. A remedy, however, that will bring large and immediate relief, and one that is simple to apply, is for the producer and consumer to establish direct business relations.

Farm products in general are not too high at the farmer's railroad siding or in the wholesale market. Some products are not high enough. The present scarcity of meats, for example, is due to the fact that live stock prices have been too low to encourage the farmer to raise meat animals. This at once imposes upon our farmers a type of agriculture that wastes the soil.

The value of farm land in the United States has doubled in the last ten years. This is as much increase in land values as had occurred in this country from the time Columbus discovered America until the year nineteen hundred.

At the present price of land and labor, it takes more than average business management in farming to pay a reasonable interest on the investment. If the burdens of which the consumer complains are to be lightened by compelling the farmer to take less than he now receives for what he produces, land values must be reduced or the land-owning farmer will become bankrupt.

Indeed, if the farmer is to build up a good system of rural schools, including a rural high school within riding distance of all the country children; if he is to build and maintain good roads; if he is to provide in the country home comforts and conveniences equal to those in the town home; if he is to build in the country wholesome recreation, and if he properly supports his rural church —in short, if he is to develop in the country a type of civilization that will grip and hold on the farm a fair share of the best people born there, he will have to have larger returns than he now receives.

A part of this increased return must come through increased efficiency in production. The farmer must not attempt to shift the burdens that are strictly his own to the shoulders of others. He must see that his methods of farming are such as to bring the largest returns at the least cost. In a word, he must do his best to become an hundred per cent farmer. Then he must employ modern business methods in marketing his wares.

Already the farmer is more successful as a producer than he is as a buyer or a seller. He has not had and is not now getting a fair share of what the consumer pays for the products of his farm, but for this the farmer chiefly is to blame.

According to the investigations of the United States Department of Agriculture, it costs approximately 55 per cent of what the consumer pays for his food to get it from the farmer's side-track to the consumer's kitchen.

Mr. Yoakum of the Frisco railroad has pointed out that the American farmer produced last year, in round numbers, nine billions of wealth. Assuming that the farmer sold two-thirds of what he produced and kept at home for his own consumption one-third, then the material he sold was worth at his door six billions and the consumer paid for it at his door thirteen billions. In other words, it cost more to get this material from the farm to the consumer than the farmer received for producing it.

Unfortunately, it is true that when the farmer is most prosperous he is least interested in co-operation, because he gets along very well without it. Practically all successful co-operation has been born of dire necessity. The California fruit growers were producing their crops at a loss and the destruction of their industry was threatened when they found the remedy in selling collectively instead of individually. The truck growers of the eastern shore of Virginia were facing bankruptcy and found the way out of their difficulties through co-operative marketing.

It is to be hoped that we shall not wait until forced by necessity to co-operate in producing and marketing our crops and in utilizing the income in building a higher life on the farm.

THE GROWTH AND DEVELOPMENT OF CO-OPERATION.

Most people are of the opinion that co-operation in general and co-operation among farmers in particular has not been successful. An idea of the extent to which co-operation has succeeded and the rate at which it is growing may be had by considering the following facts:

At least fifty million people in the world are connected with some form of co-operative business.

Co-operation has grown 40 per cent in five years in the United Kingdom of Great Britain; 50 per cent in the same time in Switzerland; 50 per cent in four years in Germany; 50 per cent in three years in Holland.

THE PRESENT STATE OF CO-OPERATION.

Great Britain leads the world in co-operation in distribution and marketing, and especially in the strength and perfection of her mercantile organizations. The co-operative stores of that country have no equal.

Germany takes the lead in co-operative banking and in the degree to which rural credit is developed.

The United States with her building and loan associations stands second in co-operative credit, but it is co-operative credit applied to the town and city, with little application to the country. The United States also leads the world in co-operative insurance, having over thirteen billions of outstanding insurance in purely co-operative societies. In the matter of co-operation in production, distribution and marketing, the United States stands near the foot of the list of the civilized nations of the earth.

Denmark leads the world in co-operation in agricultural production and distribution. It is estimated that four-fifths of the farm produce of that nation is handled co-operatively.

FIVE PRINCIPAL LINES OF CO-OPERATION.

1. *Production.*—Seeking the means of cheapening production through the joint ownership of expensive or little used machinery; in the purchase of valuable sires; uniting in producing enough of some special crop or stock in one neighborhood to attract buyers; through breeding associations or cow-testing associations; through the employment of expert assistants to help in these and kindred operations; through the employment of county advisors.

2. *Rural Credit.*—To provide capital with which to purchase land; to farm better; to hold crops for more favorable markets; to make public rural improvements.

3. *Manufacturing.*—Such as co-operative creameries, cheese factories; co-operation in slaughtering animals, curing meats, in storing perishable products.

4. *Insurance.*—Co-operation in carrying insurance on farm buildings, live stock, crops, etc.

5. *Buying and Selling.*—This includes distribution, selling to the best advantage in the markets already established and creating new markets; buying to the best advantage the things which the farmer needs for the conduct of his business or the support of his family.

All of these lines of co-operation are necessary, and in the end perhaps are of equal importance.

If I should be called upon, however, to single out the one of most fundamental importance, I should say it is rural credit. Perhaps the greatest single handicap of the farmer is lack of sufficient capital to conduct his business most advantageously. At the same time, I believe these lines of co-operation will be developed in exactly the reverse order in which they have been named. That is to say, there is more prospect of immediate improvement in the methods of marketing than in the other lines named.

THE GRANGE AND THE FARMERS' ALLIANCE MOVEMENT.

The first large attempt at co-operation in this country was made in the latter part of the seventies, when the Grange established stores and undertook co-operative buying and selling. The result is familiar to all. It had both its rise and its downfall in a single decade.

The next attempt was in the early nineties, when the returns from the farm again had become unsatisfactory. This attempt originated with the farmers' organization known as the "Wheel," later known as the "Alliance," and still later as the "Farmers' and Laborers' Union," which gave birth to the Populist party. This movement, like the preceding one, was short-lived.

Land was still plentiful and cheap, and as soon as consumption had caught up with production, prices began to rise. The force that held the farmers together was withdrawn and they soon fell apart. Again they voted and did business as individuals without regard to their fellow farmers.

The third attempt of importance has not extended its influence much beyond the southern and northwestern states, but in these states it has become a powerful factor. It is known as the "Farmers' Co-operative and Educational Union."

Those who best understand the present situation feel that we are at the beginning of another general movement in this direction.

All previous attempts at co-operation have grown out of the fact that the selling price of what the farmer produced had fallen below the cost of production, or that the margin of profit was so narrow as to be wholly unsatisfactory. In these periods it was utterly impossible to get the farmer interested in any plan looking to increasing his output, for the reason that he felt that he was already producing more than he could sell to advantage, and therefore the greater his production, the greater his misfortune.

The story is told of a Colorado farmer who shipped a car of fat lambs to Kansas City to be sold, and in return received a bill for the amount the lambs lacked of paying the freight, yardage and commission charges. The farmer replied expressing regret that he had no money with which to pay the bill, but added that he had several more cars of fat lambs, which he would gladly send in if they would be of any service in liquidating the debt. In the same period horses were not considered by the railway companies as sufficient security for freight, and all such shipments had to be prepaid.

Then the cost of living was low, lower than it had ever been before. A sufficient increase in the price paid the farmer to make him satisfied did not impose serious hardships upon the consumer. This is what happened in the period from 1897 to 1907, and all went well. It was the period of the greatest expansion that the world has known. It will be known when history is written as the period of the great growth of cities throughout the entire civilized world.

The conditions under which we are now living, however, are wholly different from those under which any similar uprising among the farmers has occurred. Now we find on the one hand the consumer complaining of the high cost of living and the farmer on the other hand showing a poor balance, due to the new value set upon his land and the increased cost of what he has to buy. The farmer cannot be satisfied in his demand for a better return on his investment by raising the price of food to the consumer, as has been done on all previous occasions. On the other hand, the burdens of the consumer cannot be lightened by requiring the farmer to take less for what he sells. In a word, a demand has arisen for cooperation for the purpose of increasing the returns from the farm and of lowering the price of food to the consumer, both at the same time. It can best be accomplished by establishing direct business relations between the producer and the consumer and eliminating all waste in getting the products from the farmer to the consumer. Obviously, both the producer and the consumer should participate in the benefit of this readjustment, and neither should expect a monopoly of the advantages and profits.

A beginning can be made at once, but its final consummation will and should require many years, perhaps a generation, and will call for the exercise of the utmost patience, forbearance and charity. The immediate and entire elimination of the middleman would be disastrous. All unnecessary middlemen finally must be turned into the productive industries, but not more rapidly than the industries can employ them to advantage.

CO-OPERATORS MUST EMPLOY BUSINESS METHODS.

Any form of co-operation to be successful must employ the methods that have been found most successful in other business. The co-operators must be willing to employ as capable men as managers as are employed by those with whom they must compete. Moreover, in competing with corporations it will be necessary to employ the methods of conducting business employed by corporations. For example, if the farmers start a co-operative grain elevator at some grain center they are likely soon to find themselves unable to compete with the corporation that owns the elevator there and also owns elevators at other points, because the corporation can outbid the farmers at the one point and make up at the other ten or a dozen points what they may have lost at the competitive point. Of course, it is all very fine to say that the farmers should patronize their own elevators, even if they can get a cent a bushel more for the grain at the competing elevator, but the average man is so constituted that he will sell wherever he can get the highest price and buy wherever he can get the lowest price, regardless of who is the buyer or seller.

To meet this kind of competition, the farmers' elevators should do exactly what the privately owned elevators have done—combine. There are more than 2,000 farmers' co-operative elevators in the United States, distributed as follows:

CO-OPERATIVE FARMERS' ELEVATORS IN THE UNITED STATES.

Iowa, 340; North Dakota, 331; Minnesota, 297; Illinois, 260; South Dakota, 225; Nebraska, 204; Kansas, 137; Wisconsin, 53; Oklahoma, 34; Indiana, 28; Montana, 27; Ohio, 26; Michigan, 23; Washington, 18; Missouri, 8; Texas, 5; Colorado, 5; Idaho, 4; Oregon, 3; Arkansas, 2; Kentucky, 1; total, 2,031.

The aggregate capital of these farmers' elevators is probably as much as thirty million dollars and their annual business is approximately six hundred million dollars. It is reported to me on good authority that they do sixty per cent of the business at the point where they are located. Yet, unfederated, a corporation operating three or four small elevators could drive any one of these farmers' elevators out of business. Federated, they would be safe against any competition that could be offered. Better still, if they were united, no attempt would be made to run any one of them out of business. They would be immune against attack. This same principle will apply to many other kinds of co-operation.

PRECAUTIONS TO TAKE.

Do not form co-operative associations hastily, and especially is it important to avoid hastily engaging in new enterprises involving business details with which the members of the society are not familiar. If a community desires to establish a co-operative store, and perhaps there is less need for co-operative stores than almost any other form of co-operation, it is important, first, to study the history and management of the Rochedale stores of Great Britain; the Arlington stores of Massachusetts; the Johnson County Co-operative Association of Olathe, Kan.; the Lyons stores in Iowa, and the chain of stores operated under the Public Welfare League of Minnesota and Wisconsin, with headquarters at Minneapolis.

CO-OPERATIVE SELLING OF PURE-BRED SEED AND STOCK.

It would be very beneficial, indeed, if a larger proportion of our farmers produced pure-bred live stock and grain. The greatest single obstacle in the way of this accomplishment is the uncertainty and difficulty of finding a suitable market for the output at a price that will justify the extra labor and expense incurred. At present only the largest breeders, with much stock to sell, can afford the expense of extensive advertising and of exhibiting at the fairs to attract buyers from a distance. The small breeder has only the immediate neighborhood for a market. The general farmer, when in need of a sire or of seed, does not know where to turn except to the man who advertises or exhibits. This means that the small breeder sells to poor advantage, and the most extensive breeder is required to make a large outlay to get customers for his wares. It would be comparatively easy to bring the buyer and the breeder together, greatly to the benefit of both and to the benefit of the stock and crops of the country.

The Agricultural College could keep a list of the available pure-breed cattle, horses, sheep and hogs for sale. A competent officer of the college could inspect the animals offered at a very nominal cost to the breeder and give to a prospective buyer first-hand and expert information regarding the merits of the animals and the quality of their pedigrees. This would enable the buyer in any part of the State to purchase good animals at a reasonable price and yet leave a satisfactory profit for the breeder. All of this now is done by the college for the grower of pedigreed seed wheat, corn, milo, oats, etc. This service should be extended to the stock breeder. It is this sort of service the college could render to all the farmers of the State.

Another way in which the breeders might co-operate to great profit would be to lay aside their prejudices and breed one class of stock in a community. That is, instead of one farmer in a community breeding Shorthorns, another breeding Herefords, another Angus and another Galloways, let all concentrate on a single breed of each class. If this were done, there would be enough Shorthorn cattle, for example, produced in the community that specialized in this breed to establish a reputation throughout the State for that community as a Shorthorn center, and buyers would be attracted without a large outlay for advertising or showing.

Another source of great loss in animal breeding is the sacrifice of sires before their value becomes known or before their usefulness is ended. The owner seldom is able to dispose of a used sire at more than common stock prices even though its value is known to be very great. Every year hundreds of very valuable sires are slaughtered at the packing houses long before their usefulness is ended and young and untried sires take their places at the heads of our herds. By such a co-operative arrangement as is here suggested a breeder having an impressive sire could notify the college authorities, and a member of the staff could visit the farm, inspect the get of the sire and record him for sale according to his actual merits.

The Agricultural College of each state should do all in its power to promote co-operation among its people. Up to present time these colleges have been chiefly concerned in matters of production. Henceforth they should give as careful instruction and conduct as fundamental researches in matters pertaining to distribution.

At Manhattan we are trying to impress upon our students that co-operation is essential to progress in any important line of endeavor, and especially that it will require the closest and most unselfish co-operation of all the farmers to build up a satisfactory system of rural schools, to revitalize the country church, to build roads, to improve the sanitary conditions of the open country, to form community centers and to create community tasks. We are trying to convince them that the moral effect of co-operation is good, that by this means honest dealing is promoted. It is the application of the principles of the golden rule to business. It gives every one something to do for the common good. It promotes democracy.

In fact, the Agricultural College should go one step farther and establish a co-operative bureau to assist the man on the farm in marketing his products. This, of course, would include fruits, seed corn, grains, live stock and every class of farm produce.

Through the efforts of the college the co-operative organizations now existing in each state should be brought into close contact and encouraged to work together. Such a bureau could well act as a clearing house of information for the consumer as well as the producer, and to help the retail merchant as much as the farmer.

The college also should stand ready to help the citizens of any community that desire to form a co-operative association to organize it in the right way and to help make it a success.

To illustrate the value of such a bureau: Last fall Kansas had a large apple crop, and it was certain that many of our farmers would have had difficulty in selling their apples to advantage if the college had not helped them. A member of the college extension staff is an experienced apple merchant as well as a successful orchardist, and it was made his business to find buyers for Kansas apples. Over 400 carloads were sold through this means. In the main, these sales were for small growers, men who are least experienced in selling this crop. One morning a letter came to the college from a man in Leavenworth county requesting a buyer for a car of Jonathans. The same morning a telegram was received from a merchant in the farmer's town, not three miles away, inquiring where he could buy a car of Jonathans. The two were brought together, the sale made and the apples and the money both were kept at home.

CO-OPERATIVE STORES.

A co-operative store is a very complicated business, and many of the attempts along this line have failed. I believe that the establishment of proper relations between the farmers and the townspeople, whereby both work toward the development of the country and the upbuilding of the town, will prove more profitable to the community as a whole than an attempt on the part of the farmers to operate their own stores.

Nevertheless, if it is desired to establish such a store, and doubtless there are communities where such an establishment would do great good, the career of the most successful of the co-operative stores is commended. The success of the Farmers' Union stores in Kansas has been very pronounced.

The foundation of all successful co-operation in this line is what is known as the Rochedale stores. The first store was organized in 1844 by twenty-eight poor, oppressed, half-starved weavers in the English town of Rochedale. Their original capital was $140. Now their annual business exceeds three hundred and fifty million dollars, and it forms the most powerful system of stores in the world. They do both a retail and a wholesale business. They operate furniture stores, butcher shops, savings banks and sell practically everything that people want to buy, and furnish practically any service they may require. In Edinborough the Rochedale stores have more than 40,000 members; in Leeds they have nearly 50,000 members.

One of the most successful co-operative stores in the United States is at Olathe, Kan., and is conducted by the Johnson County Co-operative Association. It is a grange store, and was founded in 1876 with a capital of $385 and with 77 members. Its present capital is $100,000 and its membership 900. Its first year's business amounted to $36,840, with a profit of $1,334. Last year the aggregate business was over $250,000 and the profit was in round numbers $14,000. Since the store was founded it has done a business of more than eight million dollars and its total profits have amounted to more than $500,000. The same society now operates a bank with a capital stock of $50,000 and a surplus of $50,000. It also operates a farmers' insurance company, carrying risks of more than six millions at an average yearly cost of $2.25 per thousand.

The most extensive co-operative store enterprise in this country has its headquarters in Minneapolis, and operates chiefly in Minnesota, Illinois, Wisconsin and Iowa. There are more than one hundred stores in the group with a membership of more than 10,000 and a yearly business above two millions. It is patterned after the Rochedale stores. One unvarying policy, however, is never to establish a new store in a community, but always to buy out a successful store instead, and hire, if possible, the former owner as manager and his clerks as salesmen. They have a wholesale store to act as purchasing agent for the retail stores. The retail stores act as shipping agents for their members. None of the stores operated by this league have failed and all have been profitable.

CO-OPERATION IN SELLING MEAT ANIMALS.

Missouri's chief live stock business is producing meat animals. No successful attempt so far as I know has been made to cooperate in this matter.

The Meeks county (Minn.) live stock shippers organized a shippers' association and employed the best live stock man in the county as manager. The first year they effected a saving of from $30 to $80 a car.

CO-OPERATIVE BUTCHERING AND CURING ASSOCIATIONS.

Nearly all of our meat comes from the central packing plants at Chicago, St. Louis, Kansas City and Omaha. The farmers of Kansas last year bought from five to seven million dollars' worth of meat from the butcher shops while they were shipping millions of dollars worth of live stock out of the state.

Co-operation in eliminating this waste has reached its highest development in Denmark. The Danish bacon is celebrated the country over. In that little country, about one-fifth the size of Kansas, there are thirty-five co-operative curing plants with ninety thousand members. They kill annually about a million and a half hogs. These curing plants are owned by the farmers who produce the hogs, and are conducted by the men whom they hire. Thus the farmers own the bacon and hams when they are cured. At that point a co-operative export association takes charge of the product and sends it to markets like Liverpool, London, Paris and Berlin, to be sold direct to the consumer, and after deducting the expenses the balance is remitted to the men who raised the hogs.

CO-OPERATION BETWEEN THE FARMER AND CONSUMER.

The farmer will not make much progress in shortening the road to the consumer until the consumer himself becomes interested and meets the producer half way. Obviously, the consumer has no particular interest in where he buys or from whom he buys, unless he can buy at a lower price or can get better goods at the same price. In a word, the advantages of direct selling must be shared by both parties to the transaction.

We are now trying to educate the farmer regarding the benefits to him of co-operation in production and marketing. It is just as necessary that the consumer be educated regarding the advantages to him of co-operative buying. Our present system of buying is essentially wasteful. When we were producing more food than we could consume, there was no particular reason for economy. Food has since become scarce, yet we continue these wasteful methods. Formerly the village or town lived largely off the surrounding country. Then the local market was the farmer's chief market. The town and country were interdependent. Now the farmer ships what he has to sell to a central market like Kansas City, Chicago or New York. Now the town and country are independent.

It is said that Troy, New York, receives its milk supply from New York City. With a favorable season and a bountiful harvest in Kansas, Minnesota cabbage, Washington apples, Texas onions. New Jersey peas and corn, Wisconsin butter and cheese are staple articles of diet in Manhattan.

Iowa does not produce as much wheat as her people eat, yet she ships out of the state one-fourth of what she produces and buys back several times this amount.

The farmers of the south ship live cattle from 300 to 500 miles to St. Louis, and buy back beef sides shipped in refrigerator cars, with icing charges added.

The farmer has lost whatever interest he had in the town and the town man has lost his interest in the country. There is nothing truer than that the country and the town are independent while they should be interdependent. The man in the town should be as much interested in the development of the country, and in providing a good market for what is produced locally, as he is in developing the streets, parks and schools of his town, and as he is in establishing new industries in the town.

In Kansas City they are conducting a campaign to educate the people of that city and of the regions around about to use Kansas City made products. Do you suppose they have thought the proposition through far enough to include in that campaign a suggestion that their own people give preference to those things that are grown in these regions? In short, are they willing to meet us half way by buying our products if we buy theirs?

How much of the yearly business of the local grocer originates in the locality in which he does business? How much of it comes from a hundred miles away, and how much from five hundred miles away? It would surprise you to know how small a part of what is consumed in your town is produced in your county, and I know you do not realize how much of what is locally grown is shipped out of the community and similar material grown elsewhere is shipped in. This is not wholly and perhaps not chiefly the fault of the merchant. It is really the fault of the producer and the consumer quite as much as of the merchant.

We are all creatures of habit. Convenience weighs heavily with us. The local merchant or the local consumer has no inherent objection to patronizing the local producer. In fact, if his attention were called to it, he really would prefer to do so, all things being equal. But the local producer cannot expect the merchant or the consumer to put himself to too great inconvenience merely to discharge what he may clearly recognize in the abstract as his duty to the local producer. The farmer must plan to have his supply come as regularly as possible, and, above all things, to keep it up to the standard in quality and to have it so packed and handled that it is attractive to the eye and easy to sell.

In short, the farmer must cater to his market just as the merchant does. Unless he will do this much, he cannot get the business and does not deserve to have it.

BURDENS THE CONSUMER LAYS UPON THE MERCHANTS AND FARMER.

As stated before, the consumer is as much in need of education as is the producer. We give little thought to the effect our purchase may have upon the development of local or state industries. We are just as happy with a broom made in Michigan, the brush for which perhaps was grown in our own State and shipped six hundred miles to have a handle attached, as we would be with one made in our own community. We buy western apples by the peck and let better apples rot in the neighborhood for want of a market. A neighbor kills a beef or a few hogs, and part of the meat wastes because he cannot use it all in his own family. In the meantime we have patronized the butcher shop the meats of which come from the city.

The consumer buys in small lots, usually over the telephone, and insists upon immediate delivery. He has gotten out of the habit of buying in quantity. Formerly the winter supply of apples, potatoes, onions, etc., was provided in the fall. Now these things are purchased as needed from day to day, and usually in quantities not to exceed a peck. This practically prevents the farmer from selling direct to the consumer. He has not the time to deliver daily and in such small quantities. The remedy is to be found in the consumer being encouraged to buy in larger quantities, or in establishing local co-operative markets, where the farmers' representative may take orders and later deliver the material for all the members of the association.

A merchant in Emporia, Kan., told me that it cost the retail merchants of that city of ten thousand inhabitants thirty thousand dollars last year to deliver their goods from the stores to the homes of their customers.

WHY SHOULD NOT THE FARMERS CO-OPERATE.

The farmer is the only class of large economic importance that is not compactly organized for its own protection and progress. He buys and sells and conducts all his business as an individual without any regard for the welfare of his fellow farmer. He accepts without successful protest the price fixed by others on what he produces. He pays the price fixed by others on what he buys. He does not fix the price upon either what he buys or sells.

Economically the most important member of society, the farmer has nothing to say about the terms under which he will work. Co-operating he might easily remedy this situation and become an efficient business man as well as an efficient producer.

CO-OPERATION WILL HELP TO DEVELOP LEADERS.

The great need of the rural districts is capable leaders. This is the first real step in rural progress. These leaders must be found among the rural people. There has been a notable lack of leaders in the country, not because men and women capable of leadership have not been produced there, but because they have not been developed among the farmers, mainly because the farmer has refused to be led. The laborer in recent years has been easy to organize and easy to lead. The farmer has always been difficult to organize and difficult to lead. The laborer has been ready to reward his leaders and has been intensely interested in the cause of labor. The farmer has been prejudiced, suspicious and in no particular degree interested in the cause of agriculture. Politically, he has been ineffective. His devotion to party in general has been greater than his devotion to occupation. The Government thus far has failed to formulate an agrarian program because the farmers have been divided politically and content to vote mainly on city problems.

A characteristic of the management of our great railway systems and of all successful big business is that of recognizing merit within its own ranks and rewarding this merit with its prizes. By this means the railways and other big corporations have been able to attract and to hold the best talent of the country at comparatively low wages merely for the chance at the larger opportunity ahead.

After all, the largest and most important task before us is to encourage the country people to help themselves. This strengthens; to help them destroy. They must be taught how to render effective community service. Up to this time the farm has been looked upon as merely a place for making a living. It is too much of a factory and not enough of a home. The farmer has regarded the town or the city as the place in which to spend his money and his leisure.

Institutions must be established in the country that will satisfy the requirements of all the members of the family. There must be community tasks if we are to interest and hold the best people in the country. Unterammergau, without a community task, is a decadent rural village. Oberammergau, with the Passion Play as a community task, has held its best people, and has commanded the attention of the world. The annual rendering of the "Messiah" at Lindsborg, Kan., has been a community task large enough to hold the best stock of that community for more than a third of a century.

WORKERS OF THE SOIL.

(Hon. W. L. Houser, Mondovi, Wisconsin. Address delivered during Missouri Farmers' Week.)

There can be no argument on the proposition that the world was created for all men—not a select few. It is the economy of creation that no man can acquire perpetual title to the soil, that source of all wealth and necessity. At the most, a man can only occupy a portion of it for a brief space of time. How short is life. Measured by the unnumbered years that have preceded one's existence, and by the limitless eternity that will follow, the space we occupy in the world is, indeed, of extremely narrow proportions. It follows therefore that we must make the most of our time. To waste it is criminal. To use it to oppress or do injustice to others is worse than waste. All men of intelligence and self-respect want it said that the world is better because of their presence in it. After all, our selfishness is not so narrow that we would voluntarily court the contempt of our fellows. But be our personal inclination this way or that, the world as a world has a right to insist that we all shall contribute in proportionate measure with our abilities and talents to the needs of society. And society has a right to insist that our conduct shall be so coursed as not to trespass upon the rights or opportunities of our neighbors.

But does it effectively do this? Are the scales of justice always kept at an even balance? Are those men and women we designate farmers sharing in proper proportion in the world's prosperity? I do not mean in the accumulation of riches as such, but rather in things that are essential to the happiness and development of men—things that contribute to a full life. The soil supports us. It provides all the necessities, the comforts and luxuries we have. It pays for every good thing and every bad thing the world enjoys and endures. It is the source from which the world draws for distribution among the people. All men are hired hands of the soil. Whether we plow, plant or harvest, run the great railroad trains over the country, mine, mold or cast, sell or buy, invent or make the machines of the farm, the mine, the shops or foundries, teach or preach, practice the law, print the newspapers, or heal the sick—do what we may, we are but hired men of the soil. Our compensation is provided out of that which the soil yields. Out of growing it, handling it, transporting it, or in providing the machines that increase the results of the efforts of men who directly till the soil, and that ought to be calculated to add to the opportunities for comfort and happiness by giving to the toilers of the soil more time and opportunity to seek culture, refinement and that ease of confidence that their natural faculties entitle them to, we make our living. And the Creator was not remiss when He planned and made the world. He stored the earth and the air, the very waters, indeed, with the things that men need. And they are abundant. So far as our necessities go, there is always a surplus, and always will be, unless the wanton destruction of men who are blind to the obligations they owe their fellows and posterity, shall go on unchecked.

But the point I wish to make is that all men being hired hands of the soil, they are entitled to fair wages—to a fair distribution of the products of the soil. We hear much these days about the profit-sharing plans of some great business concerns. Profit sharing in theory (in fact there is little of it) is based upon the ground that those who create wealth are entitled to share in its division. If this is true, and it is, then the men who directly till the soil should share equally with the man who is a hired man in some other capacity, proportioned, of course, to the degree of skill and ability he contributes to the work he performs. Neither is it right nor just that men who invest their surplus in the soil shall be denied that fair return upon the investment that is demanded by and conceded to other investors—those who buy railroad, telephone, telegraph or other stocks and bonds. I insist that the man who toils behind the plow, brakes on a railroad train, endures the fierce heat of the furnace, works out the inventions that ought to add to the sum total of the world's happiness, or does any necessary world's work, is entitled to fair wages, and the scheme of creation is such that fair wages are provided for all who work. Wages that would dispel want and misery; wages that would provide good books and magazines for all; wages that would assure men that needed time for rest and recreation so that the world would be bright and inviting to them; wages that would enable them to educate their children and thus qualify them to work out the good world's plan; wages that would distribute comforts and luxury so that all might participate in the world's happiness. Men do not materially differ in their natural instincts. We all demand relaxation, recreation—we all are entitled to these as a part of our wage. It was not intended that one man should spend a hundred thousand dollars upon a supper or a ball and that a hundred thousand men should toil on year after year and be denied a partnership in the world's stock of enjoyment.

Now, I know full well that there is no occupation in the world that measures out in kind the freedom, the independence and the contentment that is found on the farm. I concede that the wages of the men who directly till the soil are higher in their product of peace of mind and general contentment than those received by some other of the hired men of the soil. But this is not all that concerns us. We may know that even though we fare better than some of our fellows, yet we know also that others are surfeited with the means that were provided for all of God's children, that are withheld from the many that were intended to lift burdens that weigh, oh, so heavy, on the shoulders of millions of men as a result of the greed and cruelty of unscrupulous tyrants.

There can be no full measure of happiness or satisfaction to any man unless his faculties are fully developed and he becomes conscious of ability to take the part in the world's work that it demands of him. He must have the time, means and opportunity to develop these faculties. No man can truthfully say that he is content unless he has the proper vision of his obligations to the world while he is in it and after he has ceased his activities in this life. Unless a man lives so that his work goes on and finds fruition in the happiness of his children, and their children, indeed he has lived a narrow, almost useless life. And to farmers, especially, is this proposition peculiarly applicable. Your soil, the world's soil, is a trust that you are called upon to administer for a brief space. The soil was not created for you alone. It is only loaned to you for a time, and not to you alone, because while you occupy it others must live upon its products. You are but a tenant who must give up to others a goodly share of the things you produce. But this is not all that is expected of you. As it is expected of the conductor of the passenger train that he shall give the proper orders for the running of his train so that his passengers may be safely transported, so it is expected that you will so manage and conduct your farm that it may pass on to your son, or other successor, in better condition than that in which you received it. It is the obligation you owe your children—posterity. I know it is the desire of every man and woman in this audience to leave the world—not too soon, of course—a better place for your children than it has been for you. This must be so. Otherwise the world would perish and all in it.

Now, it is my philosophy that compensation for one's work or efforts is but partly measured in the money wage he receives. In fact, this is a small part of real compensation. The pleasure in doing is the real reward. To raise more wheat per acre, not because it will add that much more to your bank account alone, or surpass the efforts of your neighbor, but because you have added more to supply the needs of the world as a result of your intelligence and industry, is the true compensation. It is satisfying. You cannot tell me that the full compensation to the man who produced the champion steer at the late International was measured in the premiums and price the beast brought to him, high as they were. The greater compensation was in the consciousness on the part of breeder and feeder of this wonderful animal that he had done something worth while. That will last. It is the compensation of achievement.

What an obligation we are under to those who will come after us. You and I are first of all interested in our children. If any one was to insist that our children should be denied opportunity to share in the world's happiness, or to be limited in opportunity for commendable achievement, we would resist to the bitter end. It is no less incumbent upon us that we strive to leave conditions in the world when we have finished our course so that posterity may have and enjoy the blessings that naturally belong to men. I do not believe that parents should unduly enslave themselves for their children, or make sacrifices at too long distances; it is not necessary, or would not be if things were at proper balance, but I do contend that satisfaction with our own efforts cannot be attained unless we do something that will not be narrowly selfish.

Farmers have something to do if they obtain for themselves and others who do not share fairly in the country's prosperity their just proportion. Under present conditions there is no defense for a twelve-hour day's work either on the farm or in the shops and mills. There is no more reason why a farmer should work twelve hours a day than that a railroad president should be bound in service that unreasonable and unnecessary time each day. There is no more reason why the captains of finance should enjoy their annual vacation of a month or more than should the farmer whose natural endowments and natural rights entitle him to these relaxations. The soil provides the means to enable the one to indulge his desires and necessities just as it does for the other, and were it not for the fact that one gets more for his labor than he is entitled to and the other is grossly underpaid both could have that leisure and rest so necessary to the best results from a man's efforts. These are economic or political conditions that the farmer is as much responsible for as any other class of men. Content in his environment, satisfied with his progress along material lines, he has been unmindful of economic developments that have brought forth conditions that are menacing to the people's welfare.

During the ascendancy of Oom Paul Kruger, the South Africa Dutch sage, two brothers disputed about the division of their father's estate. The older and stronger brother attempted to gain an advantage over the other. Finally the dispute was submitted to Oom Paul for his decision. After the matter was fully presented to him he disposed of it by saying to the older brother: "You divide the property into two parts and give your brother the choice." There is need of some such system of arbitration in this country. We are frogetting the golden rule.

A few, a very few, men have been getting a great deal more than their share—more than they have earned. It is time that all hired men of the soil should receive their just share. Not only should this be so for the immediate solution of the question of fair division of the profits of the soil, but it is necessary in order that the menace of control of the people's resources shall not continue in a few hands, and that its solution, growing more and more difficult, shall not be passed on to our children. We are cowards if we shirk the responsibility.

I have made a careful investigation of the business conditions on the farms in the community in which I live, and that is a community where thrift and prosperity are at least at the average, and I find that the average incomes on the farms there is less than two per cent, after deducting the cost of operation. In Iowa, concededly one of the richest states in the Union in agriculture, the net income of the farms is less than three per cent. In recent years the more progressive states have found it necessary to create commissions to supervise the business of the railroads and other public service corporations in order that rates might be fixed that would be just and reasonable. It was determined at the outset that rates must not be reduced below a point where all expenses could be met and then have left a sufficient margin to pay a reasonable interest on the investment. Against this doctrine I have no argument. However, in cases where a commission is necessary to supervise the business in the interest of and to protect the people from oppression by a monopoly, I have not been able to satisfy myself that it would not be better policy for the people to own and operate such business. I believe the government should own and operate the railroads and all other public service institutions. In any event, I do contend that conditions should be enforced so that the man who invests his surplus capital in a farm should enjoy equal dividends with other investors. Surely one of these interests is not important above the other. You may depend upon it that the interests having their capital invested in railroads, or similar property, will be alert all the time to protect their investments. I insist that farmers should be equally alert. Until they are there will continue to be this unequal distribution of the fruits of their soil and labor.

I do not plead for greater returns from the soil to the farmer in order that he may have a larger bank account. I want him to have a larger life. I want him to have what justly belongs to him, so that he may see and know more of the world in the short time he is in it. I want the burdens lifted from the shoulders of the good wife who for years has toiled and sacrificed opportunities she should have made use of to make a home and save the means to send the children to school and fit them for a creditable career in the world. I want her taken out of the narrow environment into which she has been forced and brought into a larger, broader life. I want her to dress in the style of the day. I don't care whether her skirts be hobbled or hooped, if she gets pleasure out of having them so. And I want the farmer girl when she marries to feel that it is not necessary to leave the farm in order to have and enjoy the things she most desires. I do not want her to feel that she must wear her wedding dress for nice until it is out of style and in again before she can have another. I want her to mingle with those of her kind and feel herself their equal in appearance, in culture and attainments, and to enjoy associations and participate in activities that will bring her into a broad, full life.

What are some of the causes that contribute to these conditions in our country today? Why these conditions? What are the forces that have brought about this state of affairs, and how are we to reach and correct them?

All the great men in the world of education—all thinking men—are concerned today about the trusts and combinations, organizations that rob thousands of the soil workers for the benefit of the few. Do you know, my farmer friends, that you pay a greater tribute to the steel trust every year than you pay to your state government. Possibly you may say that you are not interested in steel, that you do not buy much steel. But I say to you that you are interested. You buy all the steel that is used in this country—that is, the soil pays for it. You pay for all the great steel railroad bridges, all the steel rails, all the great skyscrapers of the cities, all the steel that goes into the great battle ships. You are interested in the price of steel. If you pay more than it is worth, that much is taken from the share you are justly entitled to that the soil produces, and that you ought to have to provide for yourself, your boys and girls those opportunities and that enjoyment the Creator intended you should have. The steel trust is one of the great causes for this woefully unbalanced condition in this country.

One man dominates and controls this great industry, as he dominates and controls many other important industries. And he controls them not as agencies to serve the people, but as instruments with which to take from the people tribute to which he and those he does serve are not justly entitled. He rules the business of this country with an iron—I should say—steel hand. And I am not so particular how you spell the word, either. It is wicked that men and women suffer for the necessities of life and are deprived the opportunities to live broad, enjoyable lives as a result of these unnatural conditions that have been created as the children of criminal greed and wicked selfishness.

Our colleges should teach the truth about these great combinations that war with justice and humanity, and help in the crusade against the new slavery of human beings.

Now, I submit to you that it is your patriotic duty, more especially as farmers, who are so directly affected, that you concern yourselves about these grave problems. I repeat, we are cowards if we pass them on to our children for their solution. We are responsible for them. We should settle them. There is no difference in their effect, except in degree, in the steel trust, the harvester trust, the glass trust, the meat trust, or any of the great monopolistic combinations. They fix arbitary prices which you must pay. You are not consulted. You don't even have the Yankee's privilege of "dickering." The price of your live stock is made by the same sort of a combination that makes the price of steel. The difference in the price, therefore, of hogs on hoof and on the hook is entirely too great. You are concerned in the question of transporting the products of your farms to the market, and in all the intermediate transactions. The whole problem is the one of the distribution of the products of the soil. You have the right and the power to insist that the distribution shall be equitable and that you shall receive your just share.

That is the thought I want to leave with you. I didn't come down here to talk about the beauties of the farm. You know all about that. And it is a beautiful life. It is worth while to be in partnership with nature. You are confident of good faith on the part of your horses, your cattle and other live stock. It is only when you meet your fellow human beings that you must be on your guard. It is the selfishness of man that works injustice.

Now, my friends, I don't know how it is with you—how you feel about this thing—but I tell you there stands before you a man who will fight till the curtain drops for this equal division of the soil's products, so that all men may have the largest measure of happiness and comfort in this life. "I expect to pass through this world but once; any good thing, therefore, that I can do, or any kindness that I can show to any fellow human being, let me do it now. Let me not defer or neglect it, for I shall not pass this way again."

THE MISSOURI COTTON CROP.

(Address of Hon. C. M. Barnes, Member State Board of Agriculture, Marston, Mo.)

C. M. Barnes.

As I was going down the street today I noticed two young men coming out of one of the fraternity houses. They were evidently students starting to their classes. I do not know whether they were "hayseeds" or not; there was a time when you could tell the difference, usually by the clothes they wore, but that method of distinguishing students has disappeared. These young men had, no doubt, reached the voting age. One at least had, judging from the remarks he was making to his companion. "I'm of age now," he said, "and I feel that I can make my way through the world." Just then his feet slipped on the icy sidewalk and he came down in the shape of a big "V." I ventured to remark that I thought he couldn't make his way through in that direction unless he came down harder, and then if he did he would probably come out in China, where he would be among strangers and wouldn't know what to do. He invited me to a place where, it is said, ice does not form on the sidewalk, but being rather particular about where I visit, his invitation was respectfully declined. I preferred to be here tonight, where I might spend a few moments talking to a Missouri audience on a subject of more than ordinary interest, at least to me.

The subject of "Cotton Growing in Missouri" is one that is calculated to excite more curiosity than personal interest in this part of our State, but I greet you from that section of Missouri where the greatest of world staples is a primary crop, where the failure of cotton for two consecutive years would mean ruin for thousands of Missouri farmers and bankruptcy for hundreds of merchants and business men. That makes my subject tonight dear to me, one that I can "wear nearest my heart"—a subject that I can feel, usually, from the soles of my feet to my collar at least; and I am sure most of the men in the audience have a kindred feeling—they all wear cotton socks.

Cotton is generally considered a strictly southern crop. The very mention of it raises in your minds visions of the southern plantation with its expanding acres, dotted here and there with cabins for the "niggers." The cotton field, the negro, the mule, a bunch of "pickaninnies" with "mammy" hoeing or picking cotton; all these are interesting, but who thinks of Missouri as a cotton-growing State?

The uses of cotton enter so closely into our daily lives that many of us are apt to underestimate it. The entire civilized world today wears clothing made of cotton, and thrice fortunate is that land which will produce this greatest of commercial crops.

Cotton is the major farm product of no less than eight of the states of this Union, and ranks second in importance in four or five others. In Missouri the cotton crop is of no mean importance. Three counties in 1911 produced nearly eighty thousand bales, while the entire crop of the State that year was in the neighborhood of a hundred thousand bales. The total value of the crop to Missouri farmers was about five millions of dollars. Does such a showing indicate that Missouri cannot grow cotton successfully? We are more vitally interested in the growth of the fleecy staple than we are at first willing to admit. No, the growing of cotton in Missouri is not general; it is more nearly localized than any other of our numerous crops. Corn and wheat, oats and hay—these crops alone out-value cotton as Missouri farm products, and they are grown in all of the 114 counties, as are also potatoes and the various fruits and berries, but only a few of the southeast counties produce cotton. Away off down yonder in the southeast corner, which some of you good people would apparently like to forget, is still a part of Missouri. You never forget us about election time. The tax collector never passes us by; he reaps a rich reward in this most fertile and climatically favored district. I said you would like to forget us, but I do not mean that; it is not just that way. But let me tell you an experience I had during the State Fair last October. State Superintendent Evans was showing me the various exhibits in the educational department. All of them were good, some of them exceptionally so, and our worthy Superintendent of Schools was justly proud of the work being done in the schools of the State. We were inspecting one exhibit of high school work in which several maps of Missouri were on display. He called my attention to the excellence of this work. At first glance I recognized only one as a map of Missouri, and told him that I would not consider the others at all. Mr. Evans appeared somewhat surprised and asked why I would not recognize the other maps. In reply, I asked him that if he were drawing the picture of a mule would he cut off the head and place it in the far corner of the sheet of paper on which he was making the drawing.

He replied that he would not. Now, you are all familiar with those illustrations which purport to be maps of Missouri, with the southeast section cut off and stuck up in the corner as if it were in the way or paper was too expensive to place it where it belonged. Those are no more maps of Missouri than a map of the United States would be complete with Florida or Texas cut off and stuck up in the corner.

This Southeast Missouri is in many respects a wonderful land. Besides a five-million-dollar cotton crop, it produces the luscious watermelon which has made Scott and Dunklin counties famous. In fact, these Southeast Missouri lands are so fertile and adaptable to the successful growing of so great a variety of crops that I am tempted to digress from my particular subject.

Is Missouri interested in cotton growing? No, not to the extent that it should be. Listen! "The entire civilized world today wears clothing made of cotton, and nearly, if not quite, every civilized nation of the world has its cotton factory; but there is only one small section of the globe that furnishes this fiber in abundance, and that is the southern states of America. All the world is dependent upon the south. For cotton is the king of clothing, hence the king of commerce, and the south is the kingdom of the king who levies tribute of the world, and all the nations of the earth make obeisance to him. Cotton is today the friend of the poor, the luxury of the rich. It is made into cloth so coarse that it sells for a few cents a yard. It is made into fabrics so fine and so beautiful that it can hardly be told from silk, and so heavy and so thick that experts can barely distinguish it from wool. It is made into rope and cord so strong that it is almost the equal of flax or hemp, and into thread so fine that one pound will reach more than a hundred miles. Every year manufacturers discover new ways of preparing it, and every year the demand for it increases, and the world, it seems, cannot have enough of it. In recent years its by-products have become a food for man, beast and plant, the possibilities of which are not yet thoroughly understood. From the Arctic to the Torrid zone our clothes are made of it, our books and papers are printed on it, and if, through some calamity, we should lose all goods made entirely or partly of cotton, and if all people should be thrown out of employment whose occupation is, in any way, dependent upon it—whether in the cultivation, the manufacture or the commerce— the civilized world would be all but naked, a large per cent would be hungry and their homes would be bare and comfortless."*

Let me repeat, "Thrice blessed is that land which produces the cotton; it blesses him who produces, him who manufactures or transports and him who wears." Like many another farm products, the producer of cotton has for so long received the "short end of the stick," so to speak, that the growing of cotton is to a certain extent looked down upon, when in fact it is one of the prettiest of farm crops to produce. The cotton is a beautiful plant, easily adaptable to warm, temperate climates. It is grown as a pot flower in the north and has been grown successfully as a commercial crop as far north in Missouri as Boonville, Cooper county.

Missouri has grown cotton for more than a hundred years. It was the introduction of slaves for the purpose of cultivating cotton and tobacco that brought forth the "Missouri Compromise," and in a great measure was responsible for the attitude of the citizenship of this State in the Civil war. While the cotton-growing territory of Missouri is restricted to the southeast, I claim that it is not because the cotton plant is not adaptable to the soil and climate of practically all that part of the State south of the Missouri river, but that there are other reasons why it has not met with favor farther north. Since the Civil war Missouri has been developed by emigrants from the northern states rather than from Virginia, Kentucky and Tennessee, whence came our settlers before the war. The later emigrants are not familiar with the growth of cotton, its method of cultivation, etc. The price of cotton for two decades was barely above the cost of production in the south, where negro labor was cheap, and thus it came to be neglected by the more northern communities. But in Southeast Missouri, where the southern element continues to predominate, the successful growing of the cotton plant has never fallen into disrepute, but is more rapidly gaining favor since the price has advanced to such a degree as to make its cultivation attractive. The crop of 1911 aggregated almost a hundred thousand bales, and the total value of the lint and other products approximated five millions of dollars, yet this crop was produced on less than eighty-five thousand acres, giving a yield in excess of a bale to the acre—more than fifty dollars per acre on an average for Missouri's cotton in 1911, and this in a haphazard, unscientific manner of cultivating and handling. What other state approaches Missouri in the yield of lint cotton per acre? I might almost say, none. Missouri leads in the yield per acre of cotton, a fact that is not appreciated by the average Missourian; and further, Missouri's cotton crop is usually in excess of at least two of the commonly considered cotton states, namely, Virginia and Florida. The latest statistics to which I can now refer show Missouri's yield of lint cotton as being one hundred and thirty pounds to the acre in excess of its nearest competitor, North Carolina, and two hundred and forty-eight pounds per acre more than Texas, which produces the largest total yield of any state and on account of which she leads all the states in the gross value of her agricultural products. Furthermore, a comparison of the statistics for the past ten years discloses the fact that the average yield per acre for Missouri is increasing while that of most of the other states is decreasing. There must be a reason for this. Missouri is so far north that there is little fear of the boll weevil; Missouri's soil and climate is well adapted to cotton growing, and especially is this true of Southeast Missouri.

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*"The Story of Cotton," by Brooks, Rand McNally & Company.

A year ago when I became a member of the State Board of Agriculture I appreciated that cotton is a great commercial crop for the Missouri farmer, that its production had received no encouragement from the State, that the cotton planters of the State were groping in darkness as to the best varieties to cultivate. The problem of increasing the yield by intelligent seed selection has not been much more than suggested. I introduced a resolution looking toward the establishment of experiment stations for the purpose of determining what varieties of cotton are best for the Missouri farmer to grow and to determine how great is Missouri's cotton-producing territory.

The demand for cotton is growing at the rate of about one-half million of bales per annum, and it is evident that the day is not far distant when the American crop must be greatly increased, not only by increasing the yield in the territory already cultivated, but also by extension of that territory northward. I am firmly convinced that cotton can be grown commercially in all that territory in Missouri south of the Missouri river, and instead of one hundred thousand bales I expect to see Missouri's cotton crop exceed a million bales. It can easily do so and not seriously encroach upon the lands now given over to the cultivation of grain crops. If I should say that three millions of bales of cotton are possible for Missouri you would think me beside myself upon the subject, but it is quite possible. This is not as much as the difference between the total crops of 1910 and 1911. The crop for 1912 bids fair to show an increase of a million bales in excess of 1911, and with such an increase the price of the crop has not declined to any great extent, showing that the world's requirements are growing with each year. Edward Atkinson, the great statistical expert, has stated that it will take 420,000,000 bales of cotton to clothe all the human family up to the present standard of the most civilized nations. Civilization is itself judged by the clothing it wears as well as by what it eats and reads. If the one is coarse the other is apt to be.

Fifty years ago wool was the principal material used in the manufacture of the clothing of the world. Today nearly ten billion pounds of cotton lint are spun and woven entirely for the needs of the civilized people of the world in making clothing. This is more than double all the other textiles combined. Nine states produce four-fifths of the world's supply of cotton. Yet in 1910 there was exported from the United States more than one-half of the cotton crop, unmanufactured. While we exported only a little over thirty-three millions of dollars' worth of cotton goods and manufactured articles, we imported twice as much manufactured cotton goods from the foreign countries to whom we furnished the raw cotton, or over sixty-six millions of dollars' worth. What do we Missourians do with our cotton? We ship it to St. Louis or Memphis, thence to some Atlantic seaport, thence to Liverpool or Manchester, England, where it is spun and woven. It is then returned through the ordinary channels of trade, perhaps to New York or Baltimore, whence it is distributed to the various jobbers of dry goods at St. Louis or Kansas City, and by them scattered out to the country stores and is purchased back by us Missourians, who produced the lint and shipped it more than half way around the globe to get it to ourselves in condition fit to wear, while our own beautiful Ozark mountain streams flow on to the gulf undeveloped and our coal mines go unworked. We have right here in Missouri the capacity for both growing and manufacturing the cotton. With the development of this cotton industry we can and will revolutionize the Ozark regions, fill the valleys with cotton fields and crown the hills with factories. We can save the freight twice across the ocean, furnish our own citizens with profitable labor, and laugh at the European spinner and weaver. Do you know that during our Civil war the United States was almost involved in war with England because, on account of the blockade of southern ports, the English spinners could not get American cotton? Do you know that when cotton growing was first introduced into the colonies and grown in Georgia at the behest of Parliament, King George wrote a personal letter to the Governor of the Georgia territory notifying him that the citizens of Georgia must not learn to spin and weave the cotton fiber into cloth; they would be permitted to ship their lint to England, where it would be manufactured for them. It was not possible for us to celebrate the Fourth of July until we started something independent. But today we are not yet economically independent of England, as they consume almost sixty per cent of our cotton crop, and we buy back over sixty-six millions of dollars' worth of their manufactured cotton products. I think it can be said without fear of successful contradiction that the cotton production, with the industries which have been developed from it, constitutes the most important line of industrial development which is founded strictly upon a farm crop. It is, therefore, of the utmost importance that we investigate thoroughly this wonderful agricultural resource and give assistance to its development to the highest degree.

Cotton is an intensive crop. It must be hand-hoed and hand-picked. These are two of the processes in its production which we have not gotten away from, but I believe the time will come when machinery will be constructed that will do away with the hand-picking to a great extent, at least.

I would like to interest the people of the entire State of Missouri in this great subject of cotton growing, to show you what this crop will develop in future years, that this State can and probably will grow three millions of bales of cotton, and manufacture even more. I would like to see you as thoroughly interested as we are. There is no product of the farm for which there are so many uses as those derived from the cotton plant. Besides the thousand uses of the lint, the oil from the seed is the foundation of another line of great industries. The cottonseed meal is used by stock men who finish their product for the best markets. The hulls go back to the soil, and even the stalks produce a fiber which only awaits a machine to develop it. There is no agricultural product grown for which there are so many uses.

The following from the Manufacturers' Record (Baltimore) gives a fair idea of the national importance of the cotton crop. In Missouri we have not more than begun to appreciate the value of the crop. Its adaptability to our soil and climate has been questioned, but the fact that our yield per acre is greater than any other cotton state, that the quality of our lint is finer than any other district, and that we are too far north to be seriously menaced by the cotton-boll weevil, that when seed from duly acclimated plants are planted we are as sure of a crop as any other section of cotton-growing territory should be evidence sufficient that we are not giving the attention to cotton production in Missouri that the greatest of staple crops deserves.

"Everybody talks about the south's supremacy in the world's cotton production, but few people quite understand what this supremacy really means. It is worth more to the southland, more to this country, than would be the possession in the south of all the gold and silver mines in the world. If nature had put in your section every ounce of gold and silver that exists in all the earth, it would not have done one-half so much for the real wealth of the south, the prosperity of its people and its influence in the world of affairs as it did when it gave to the south the power to monopolize the cotton trade. Within the last few years, since you have been getting a fairly decent price for your cotton, it brings to your farmers about $1,000,000,000 a year and three-fourths of this comes to you from the north and from Europe. Your cotton is like a great funnel, through which in effect, all the gold and silver annually mined on earth is poured into the south. Even then Europe has to pick up an additional $100,000,000 or more and send to you to settle your annual bill for cotton. The gold output of the world is less than $475,000,000, while Europe pays you a bill of $550,000,000 to $600,000,000 for your cotton.

"Civilization is more nearly staked on cotton than on any other one crop. You could find new foodstuffs if wheat and corn were destroyed, for there are other crops which could take their places; but man has not yet found any other substitute for cotton. This country would be bankrupt without it. If we did not get back from Europe the $500,000,000 to $600,000,000 which annually comes through the sale of cotton, the balance of trade would be against us; panics would rule the land and industrial depression would be the order of the day. The destruction of any one cotton crop would bring on a panic in this country, as well as in the great textile centers of Europe.

"However, cotton, royal crop that it is, whose empire sways the world, is a crop which the south could abandon with less loss to itself than to other sections of this country and the world. The south could give up cotton and get rich on diversified agricultural and industrial development. But if the south abandoned cotton, the business of the world would be shaken from center to circumference. Cotton is a national asset. It does not belong to the south alone. That section raises it and ought to reap boundless wealth out of it; but cotton is an asset of such priceless value to the nation that it well behooves the nation to safeguard its interests.

"In the last 33 years the value of the south's cotton crop, including seed, aggregated $16,452,000,000. In the same period the world has produced $7,634,105,600 of gold and $3,459,909,642 of silver. The total for these 33 crops exceeded by $8,817,894,400 the output of the gold mines of the world, and by $5,357,984,758 the combined values of the output of all gold and silver mines for the same period. During this 33-year period the value of the export of raw cotton was $9,685,282,138, or more than two billion dollars in excess of the world's output of gold. If it had not been for this enormous shipment of cotton abroad and the billions of dollars which have come back to this country to pay for cotton, our foreign trade would have made an entirely different showing.

"The mechanic in the shops, and the day laborer in the streets of the north and west, the manufacturer, it matters not what he may be making, whether it be locomotives or pins, or where he may be located, the grain grower in the northwest, the banker and the investor are equally interested, and very vitally so, in watching the weather which foretells whether or not the south is going to give to the world a cotton crop adequate to its needs. No other crop is so closely watched, nor in all the world is there another crop upon which so much of prosperity or of poverty in nearly all lands depends. Here is an asset that can be cashed at any moment in any financial center of the world at any time, regardless of wars or rumors of wars, panics or any other disturbance. By better and more intensive cultivation you can easily double your cotton crop with but little increase in acreage."

THE STUDY OF AGRICULTURE.

(R. M. Washburn, Division of Dairy and Animal Husbandry, University of Minnesota.)

R. M. Washburn.

The study of agriculture is coming to be very popular as we all know, being taught in the colleges and the universities, in the normal schools, high schools and academies, and even down in the grade and primary schools; being taught in various institutions and before different sorts of audiences. It is not local. It is not confined to any state or to any section. It is a nation-wide, progressive movement, on the part of the American people, north, south, east and west.

So popular has this line of work become that it has attracted the attention of large interests. We find, for instance, the bankers in conventions are making questions of agriculture a part of their business. I am inclined to think that if they would let the farmer have money at a little lower rate of interest and let him attend to his own details it would work out just as well. We find, too, that the railroad magnates are becoming greatly interested in agriculture. We find that the business men's associations and commercial clubs all over the country are now interesting themselves in the matter of agriculture. It is getting to be a fad, a positive fad.

It is always wise whenever there is a great popular movement that we pause in the midst of it and study carefully whether we are on the right track. If we are, let us forge forward yet more rapidly, but if we are not, let us understand it as soon as possible.

Some of us are now thinking that agriculture is being taught for the first time. That is not true. Agriculture was taught—whether studied or not may be another question—a great many years ago. We find, however, that the accurate study of agriculture is really modern and is confined to a few countries.

If we go back into history to find out what people tried to teach or learn, we will find that the first schooling ever given to people was of a very primitive sort, consisting of the father teaching the son to make and to use the clubs on game and on the enemy, and the mother drilling the daughter in the simple household arts. It was a very crude and very manual sort of education. When man developed to that point that he could think in the abstract, think out in the future and grasp ideas, it seems that the education swung to the opposite extreme, from the intensely manual principle to the ultimate limit of impracticability, best illustrated by the ancient Chinese system. When the Chinese boy reached the age of five years he was set to commit to memory a great mass of the teachings of the ancient Confucius and learn it in the ancient Chinese language, which he did not understand. Only about three in a thousand of the boys were mentally and physically strong enough to stand the strain. While they have been building up and the government systematically encouraging that sort of education the people have been left to work out their own system of agriculture and mechanics. Great famines are not infrequent in China.

We find, again, that Egypt, one of the first countries to develop civilized conditions, has not devoted much time or attention to agriculture. They were philosophers and lawmakers, but while those capable friends of the country were devoting their attention to philosophy and to law the peasant farmers were left to their own devices, and we find that they are still plowing with a crooked stick, harvesting and threshing by hand. If it had not been for the great fertility brought in by the Nile, starvation would have followed. They produced something of value, but did not train their people to produce more stuff per man, with the result that at present more than two-thirds of the total population has to spend its energies in production of food and clothing. The country is now controlled by England.

India furnishes another striking example of the same thing. It is one of the earliest countries to have civilization, yet they have not been progressive, they have not gone forward and they hold a very low position among the countries. They are also controlled by the English. We have been told that the Hindoo mind is incapable of imagination, and lacking imagination they cannot see in their mind anything they have not seen with their eyes. This is not entirely correct. Look at the beautifully carved temples of that country, elaborate in their architecture, and we will have to admit that the mind which could conceive such buildings, and execute them, is a creative mind. While those men who were capable of constructive achievement, were devoting their time to temple building, to the expenditure of wealth, the farmers as a whole were spending their time in plodding in a most miserable way.

It may sound unkind, but it can be borne out, that agricultural progress has not been brought about to any considerable degree by the farmers themselves. Whether in Egypt, China, India or America the same is true The problems of the farm are so deep, so numerous and so intricate, and the time of the farmer so thoroughly occupied by a multiplicity of labors that it is next to impossible for him to learn by trying untried methods. We realize now that the problems of the farmer are as deep and mysterious as the problems of life. The whole system of farming is the handling of life, animal life and plant life and the juggling of one against the other. The poor Hindoo farmer has been left to work out his own problems, with the result that 72 per cent of the people of India are now what may well be termed "peasant farmers," ignorant and poor, every few years dying by the thousands, literally dying like animals by the roadside, in such numbers that the living are not numerous and strong enough to bury them. We are now learning to respect the man who makes two pounds of bread stuffs grow where one grew before, instead of doffing the hat to the millionaire who has succeeded in coaxing two dollars from a neighbor's pocket where only one had been gotten before.

We find in Russia at the present time a painfully interesting condition. The people as a whole are very poor and ignorant beyond belief, and their methods of tilling the soil and harvesting and threshing the crops are so crude, so expensive in labor, that improvement is very slow. Plows made of the crotches of trees and harrows of boughs, lashed together by willows with the stub ends of the lateral branches left long to serve as teeth are used to cover the grain.

The nation is in debt, but the farmers can pay but little taxes, because so poor. If the nation would only aid the people, beginning with the producers and distributors of human necessities, to become financially able to pay, and in gratitude willing to pay, then not only could they meet the interest on foreign loans, but the principal as well.

In all the countries thus far mentioned, liberal, even extravagant buildings of various public sort have been constructed. These gorgeous temples and theaters serve to prove that the mind of the Greek, the Russian and the Indian, has inventive, constructive ability, but most of the constructive work has been done in the wrong direction. It spent the energies of the people upon those things that in turn produce nothing. If, instead, those few of every period and country who possessed creative ability had devoted some of their time to the construction of better plows, harrows and reaping, threshing and milling machinery the direct producers could have produced more food stuff per man, if not per acre, and thereby had more food per population.

The production of that which will aid in further increase in production is the highest type of economy.

Insomuch as all people live almost wholly upon the products of the soil, they are or should be interested in the question of surplus food production. Since we give to the man who grows the grain, first right to it, he to save enough for bread and seed, and to sell only the surplus, all people in cities are vitally affected, not by the total production, but rather by the size of the surplus, for upon that portion the urban population must live. Government and state aid in matters of food production are therefore merely the people as a whole spending a part of their own money in an endeavor to guarantee to themselves an adequate surplus over the producers' requirements. It is clear, therefore, that agriculture is not being studied for the farmer, but through him for humanity.

While in matters of improved agricultural methods the farmer gets first benefit, it is also incumbent upon him to first put his own money, brains and energy into the business to get it, and that in the last analysis the city dweller will be more keenly affected than will the farmer.

Our government not only has the human right to spend of public funds to improve or increase production, but it is actually the duty of the Government to do so, just so long as the product of such study is of real value to the race. But when on the other hand the article produced or the substance grown is not needed by mankind, then such use of public funds is a misappropriation, an indirect subsidy to those individuals engaged in the industry.

The United States Government, and no less than twenty-three states of the Union are at the present time thus feeding a certain useless industry, to wit, the tobacco, under the guise of aid to agriculture.

Even if, for the sake of argument, we grant that the use of tobacco is not injurious to the adult, we must all admit its harmful effects when used by young boys, the mere children of our public schools. State aid in the culture of tobacco means just one of two things; it either cheapens the product and thereby encourages its use, or it increases the profits of those who are engaged in the industry. In either case, our money has been used to harm our boys. When China wanted to check opium smoking, she did not commence by subsidizing the production of the poppy. How silly in our people to enact stringent laws to curb the use of tobacco and then to turn right around and appropriate money to encourage its growth. The growth of this plant is very hard on the soil. More public money is now needed to reclaim the fields thus reduced in power to produce. The acres planted to tobacco in the United States in 1912 would have produced about 100,000,000 bushels of corn if they had had the chance. The corn would have left us richer in power to produce, while the "weed" left us poorer in human labor wasted and boys made less fit. If the growers of tobacco wish to form an association and tax themselves for the study of the crops, all well and good, but it certainly is time the people refused longer to furnish money for the personal enrichment of those in the business, or for the weakening of its own sons.

The study of the brewing qualities of barley, and the ills of the wine-grape are two other avenues of misappropriation under the guise of aiding agriculture.

The wisdom of state aid in the production of the useful is well demonstrated by the prosperous, loyal condition of the Danish people and the wicked folly of state aid in the growth of the useless or worse is abundantly exemplified by the poverty, squalor and anarchistic tendencies in certain portions of France and Italy today.

When the fruit of any labor has genuine human value, then the people's money may properly be spent in its study, but when not, appropriation is misappropriation.

True agriculture is being studied, not for the farmer, but through him for the people as a whole, but false agriculture is being studied at the expense of the people for the benefit of a few and the injury of many.

Missouri Home Makers' Conference.

OFFICERS.

President—Miss Alice Kinney, New Franklin.
First Vice-President—Mrs. J. Ed. Hall, Lamonte.
Second Vice-President—Miss Louise Stanley, Columbia.
Recording Secretary—Miss Pearle Mitchell, Rocheport.
Corresponding Secretary—Miss Nelle Nesbitt, Columbia.
Treasurer—Mrs. Cora Chapin, Appleton City.

ADVISORY BOARD.

Mrs. N. H. Gentry, Sedalia; Mrs. Marie T. Harvey, Kirksville; Mrs. F. B. Mumford, Columbia; Mrs. W. C. Hutchison, Jamesport; Mrs. Scott Cunningham, Palmyra.

MINUTES OF PROCEEDINGS.

The Missouri Home Makers' Conference met in the Gordon Hotel building at ten o'clock Tuesday, January 14, 1913.

The minutes were read by the secretary and approved.

The report of the treasurer showed:

Amount received from dues	$50.95
Paid as State federation dues	3.00
To Miss Kinney for canning club	5.00
Balance in treasury	$42.95

Report of Mrs. Scott Cunningham, treasurer, accepted.

The President's address followed, in which she emphasized the need of encouraging the study of household economics and of home-canning of fruits and vegetables. She reported the success of this year's contest in that line, the prize winner being Miss Martha Blume of New Franklin.

Reports from country clubs came next. Mrs. Cullen of Appleton City told of her rural club, its interesting studies, the assistance given to community amusements and the encouragement to local enterprises by financial aid and personal interest.

Mrs. Chapin told of a club in North Missouri composed of ten families, the children included, formed for mutual social and mental diversion.

Mrs. G. B. McFarlane, State regent of the D. A. R., spoke of the various evils that were a menace to home happiness. She read from a report of D. A. R. committee on home study, in which the desertion of the home arts and crafts was deplored.

Miss Maude Griffith gave a report on the International Congress of Farm Women, which met in Lethbridge, Canada. She gave a clear idea of this meeting of representatives from all nations interested in the same subject. One of the features of the congress was "The recognition of farm women in positions of importance and trust."

The "Organization of home economics clubs, under the auspices of the State Board of Agriculture," was discussed by Miss Nesbitt. She said that the clubs were organized upon request of the community desiring such clubs. The Board would like to establish home makers' clubs in each district articulating with a county organization, this in turn belonging to the Missouri Home Makers' Conference.

Mrs. C. W. Greene announced that an exhibit of materials from which toys could be made was displayed in another room of the building.

Miss Whittier of the University library staff told how libraries could be used to assist the club woman, recommended traveling libraries and suggested a list of reference books.

Mrs. C. W. Greene talked on the "Organization of Home Economics Clubs." She recommended the reading of home economics magazines, and advocated organizing clubs. She thought laws should be passed to prevent marriages unless the participants have passed a medical examination. She said assistance would be given in organizing clubs whenever asked.

Mrs. John Pickard talked of "Music in the Home." She thought the Victrola a fine medium of giving music to children. This music, she thought, should be nature music. Not many operas could be used because of their dealing with the emotions and passions of life, of which the child is ignorant. She gave "Midsummer Night's Dream" as well adapted, combining literature and music. Selections from this opera were given on the Victrola, besides selections from the Gadsky records of the "Erl King" and others.

The recent theory of teaching children music by associating it with colors was discussed, and Miss Kinney told of successful experiments with this system, the loud notes corresponding to the strong colors, and vice versa.

A "Report from Pettis county Home Makers' Conference" was postponed on account of the absence of Mrs. Sneed.

Discussion of "Programs by Chairmen of Committees of Various Clubs" was led by Mrs. A. F. Stephens, representing a local home economics club. She said study began with foodstuff of staple kind; then more complicated articles of diet were tried. Recipes were tested and recommendations made regarding changes to be made in same, these signed by the name of the person suggesting these. Other subjects pertaining to household problems and plans followed in turn, passing on to the care of children, books in the home, etc. The discussion of the nutritive values of hard and soft wheat for bread were discussed and preference was given to the first.

SECOND DAY—WEDNESDAY, JANUARY 15.

The conference came to order with a good audience present.

Mrs. Alford of Vandalia proved herself worthy of her reputation as a champion poultry raiser. She argued strongly in favor of a pure-bred strain in the stock birds, and disapproved of a mongrel flock. She stated that $50,818,145 was the total income from Missouri poultry last year, and thought breeding poultry for eggs the most profitable from a business standpoint. She advised poultry raisers to pay more attention to scientific care of poultry. The number of questions from the audience indicated the general interest in this industry. Mrs. Alford thought that wet mash was a better egg producer than other foods, and that it should be given warm in winter; also that this food given to hens brought better returns than if given to hogs. This should be fed at noon, unless this meal could be given early in the morning, in which event it could be made heavy, since the birds would have time to exercise and digest a big meal. She recommended trap-nesting for breeding purposes. She thought less than a pint of grain per hen, twice a day, with mash at night, about the proper ration.

Mrs. Scott Cunningham's paper on "Indian Runner Ducks" was read by the secretary, and was followed by discussion of the different breeds and their respective quality of eggs. Miss Denny gave her experience as 1,787 eggs from 15 ducks from January to August, but found the market price no higher, locally, than for other eggs. It was her opinion that it was better for Indian Runner Ducks to have no water in the winter time to bathe in, since their feet were tender, and cold feet prevented laying.

"Squab Industry," by Miss Kinney, brought out the fact that the popularity of this business had waned, because of the exaggerated statement made about its possibilities in the beginning, which the squab-raiser did not realize. She especially liked them because the male parent took as much family and domestic responsibility as the female. They paired for life and her oldest were eight years of age. The young were fed by the parent bird from a deposit known as "squab milk." Four to five or six weeks was required to bring the squabs to marketable age, and they are drawn, leaving the heads, for shipment. The sex of the bird could only be decided by watching their actions at the laying season, when the male bird drives his mate about for exercise before she lays her egg, this being necessary to that result. They require a quantity of water and always drink after each meal, dipping the whole head under water.

Prof. H. L. Kempster, in answering the "Question Box," thought that the embryo in the eggs of the incubator indicated the amount of moisture required, but at all times the sand tray should be moist. He gave his opinion of a fireless brooder, but did not recommend it. In moderate weather it may be used with reasonable success, but at all times it requires constant care. He thought from 18 to 28 days sufficient time to keep the breeds of chickens from running together. The health of chickens depended largely on the care given them. He said the larger varieties of birds were lazy in their habits, the smaller kinds being more active, therefore better layers. He thought it depended on what other rations were given little chicks whether bran should be kept before them. He also thought that raw corn meal was bad for chicks and would give them diarrhoea; baking the meal improved this. Commercial rolled oats spread on top of straw was recommended, and milk, both sweet and sour, fed not alternately, was fine.

Meeting at two o'clock opened with a talk by Mr. O. R. Johnson on the farm management department of the University. Mr. Johnson told of things which would simplify home management and save work and time. To find exactly the expense of the farm, home accounts must be kept too. To simplify this, he thought classifying the labor of the day would help; also a record of expense of buying articles for the home, using a classified list.

Dean Mumford, in his talk on the "Social Institutions of the Country," said that he believed the Home Makers' Conference was the most important which met during Farmers' Week. The chief institutions of the country were the church and school. Country people, he thought, were suffering from the efforts of reformers to better conditions in rural communities, and said that these problems must be solved by the country people themselves. He thought the churches should change their ways, become more progressive and liberal, and felt that fewer churches with larger congregations, where there would be a resident minister, with general co-operation, would bring better results. His childish belief had been that the ministers were the only men sure of heaven, and he yet believed that the pastor should be held in high regard, and in turn should establish a close relation between himself and the community. He also suggested that the church might be used for giving simple entertainments for amusement. In former days, he said, the school-teacher had to have as much qualification for keeping the school in order by physical strength as for proficiency in mathematics, but there were no more so many large boys in the country schools to be kept in order, since they had gone to town, as had many farm families.

Mr. A. F. Field of the department of physical culture told of "The Need of Physical Training for Country Boys." The boy's heart, he stated, increases in size so rapidly that activity is necessary; so it is not natural for him to sit quiet and read. He stated that ninety per cent of the boys in the University have some degree of curvature of the spine. Athletics and play stiffen the muscles and backbone and should be encouraged. When the boy is passing into manhood, exercise is then most important. The boy does not feel natural at church or at table, he is ill at ease; but in play and games he is at home. Eleven counties in Michigan are giving their attention to the physical and moral training of rural boys. He thought the country could be made attractive to the farm boys, and thought that social intercourse and opportunities for amusement of a physical nature kept many of them in the towns.

"The Woman's Side of the Farm Home Management" was given by Mrs. J. Ed. Hall. She thought that a record could be kept in the kitchen, where it would be convenient in passing about the home work to jot down each expenditure.

Mrs. Horace Windsor in her paper advised the giving of good reasons to children when they inquire why things are denied them. She thought mothers should read books before their children do, and that children should be given some interest in the home and farm products.

The following committees were appointed: Nominating committee: Miss Stanley, Mrs. Wilson and Mrs. Ed. Hall; scoring committee, Mrs. Bettie Gentry, Miss Nelle Nesbitt and Miss Louise Daniels; resolutions committee, Mrs. Cora Chapin, Mrs. Alford and Mrs. Sturgis.

THIRD DAY—THURSDAY, JANUARY 16.

The conference opened at ten o'clock with an address by Miss Edna D. Day, formerly of the home economics department of Missouri University, but now of Kansas University, on "The Problem of the Girl." She brought out the fact that many girls take up work without any preparation, thinking it will be temporary, looking toward ultimate marriage. This results frequently in dissatisfied women who are not equipped for the work undertaken. Modern home making, she said, was more a matter of wise expenditure than of production, as in former years. The girl is prepared in this age for home making as well as qualified by education to take up a vocation if she chooses. Miss Day strongly urged the earning young woman to save a portion of her salary, thereby forming careful habits as well as preparing for the "rainy day." She said the average girl was not content to stay at home and keep her mother company alone, but naturally wanted to be an earner, and she advised that they be given a share in the home profits.

Mr. M. E. Darby, State Apiary Inspector, spoke on "Women as Bee Keepers." He thought as a branch of agriculture it was sadly neglected, and that it could be made remunerative. He recommended reading a number of bee journals and the study of a good textbook on bee culture. The hives, he said, should be placed in the back yard, and have shade during the warm weather, but a house to shelter them was not necessary. He believed the Italian bees to be the best variety, and advised the use of the best improved hives. He believed everyone should have a good smoker, since smoke was a necessity toward subduing the bees. He showed the dress used for protection; also models of hives, traps and specimens of comb.

The question box on "Care of Flowers" was answered by Mr. Horace Major, the landscape gardener of Missouri University. He said that flowers should be given necessary care, but not handled too much or fussed over; that ferns from the woods could not always be grown in the house in the winter, but if kept for a while in the dark after being transplanted, they might thus be tricked into growing after being brought into the sunlight. As to whether fire was any remedy for the aster beetle, he thought tobacco tea made from stems or dust and well diluted, sprayed on the under side of the leaf, might be effective, while the dust sprinkled on the earth would eliminate slugs. Pinching the buds of the aster would insure late blooming, he said, and also advised cutting the plants back. Asked whether the bulblets of the Chinese lily would bloom, he gave a few instances where they had done so, but more had failed, and he advised selecting the sacred lily with strong bulbs on which were few bulblets. As to what could be planted to succeed tulips, he recommended China asters, scarlet sage, sweet alyssum or coleus, but did not think other bulbous plants should follow. Asked if shade were necessary to pansies, he answered no, that it was not; that all plants needed sun, and that this particular flower required loose soil and plenty of moisture to prevent drying out. The Iceland poppy is not a perennial, he said, but the Oriental poppy is. As to whether there is any way to prevent blight on the rambler rose, he advised spraying the bush with a quantity of soapsuds into which had been put a tablespoonful of kerosene. He doubted if there was any variety of "everblooming carnations," in spite of advertisements to the contrary. Any of the perennials might be used with any of the hardy plants, but if red should be mixed with white about them, he advised iris and peonies for the flower garden, as being varied in color and profuse bloomers, as was also the pompon chrysanthemum, the hollyhock and golden glow.

"Flowers for Pleasure" was discussed by Mrs. J. G. Babb. To get best results, she thought, care and cultivation should be given. She recommended as ornamental shrubs the burning bush, bridal wreath, with lilacs and snowballs for background. She thought the Siberian iris very fine with many varieties of phlox, but had found tulips an expensive experiment. A great many seed varieties were good, but sweet peas and nasturtiums were easiest of culture. In a small space rows of bulbs could be used, the taller in the background and poppies scattered among all, paying attention to harmony in color. This result would be pleasing.

The convention then went into executive session. Motion to change the name of the executive board to advisory board was carried. The nominating committee then suggested that the name of Mrs. Scott Cunningham be added to advisory board, which was adopted by the convention. The nominating committee reported as delegates to the biennial the names of Mrs. N. H. Gentry and Mrs. W. F. Flournoy, with Mrs. P. P. Lewis as alternate. Report accepted by convention.

The committee then reported on nominations for officers to serve for one year: President, Miss Alice Kinney, New Franklin; first vice-president, Mrs. J. Ed. Hall, Lamonte; second vice-president, Miss Louise Stanley, Columbia; recording secretary, Miss Pearle Mitchell, Rocheport; corresponding secretary, Miss Nelle Nesbitt, Columbia; treasurer, Mrs. Cora Chapin, Appleton City.

Convention moved acceptance and adoption of committee report.

At 1:30 o'clock the conference met and listened to Mrs. Charters on "The Moral Training of Children." "Caring for the physical welfare of the child comes first; later follows the duty of mental training. She told of a statement by Dr. Elliot "that for 6,000 years there has been no improvement in ethical training," but she doubted if it were true. She thought the spiritual training of the child was largely turned over to the church, but the moral guidance was the duty and task of the mothers. She thought this a wise provision, since the mothers had most to do with the children, and woman was the more moral, naturally, of the sexes. She believed that the child was born without any moral balance, and this had to be developed. She said that children were more easily tired than grown people and this was often responsible for their misbehavior. In response to suggestions for keeping children quiet, the majority thought story-telling the best method. She urged her women hearers to go home and organize mothers' clubs for the mutual study of child training and care.

Mrs. Rich being absent, her paper on "Commercial Gardening" was read by the secretary. Miss Kinney then told of potatoes raised in a pen in layers of straw and manure which yielded well.

Mrs. Ravenel's paper on "How May a Home Garden Be Made to Last the Year Round," was read by Mrs. C. W. Greene. It gave a good idea of the proper planting and cultivation of the home garden and recommended cross-walks and the rotation of vegetables. From two quarts of peas planted she had produced four bushels, canning the surplus, as she did, of all vegetables.

Discussion of gardening followed, showing many ideas and various methods.

FOURTH DAY—FRIDAY, JANUARY 17.

A talk on house decoration by Miss Dobbs and an exhibit were given at 9 o'clock and were well attended.

The conference convened at 10 o'clock, and on account of the absence of Mrs. M. W. Hudson and Mrs. Harris, who were to have talked on "Home Dairy Experiences," this was omitted.

Mrs. Marshall Gordon told of "The Best Breed of Cows," and gave the Holstein as her preference. Mrs. C. W. Sappington being absent, the Jersey cow did not find her friends in the audience.

"Butter Making in the Home" brought out many ideas on this farm art. It was found out that some farm homes used oleomargarine for cooking and bought their butter, selling the cream. Argument in favor of placing good country butter on a commercial basis with creamery butter was made, and also a protest against putting it in the same class with poor farm butter.

"Will the Parcel Post Solve the Problem of the Farm Products?" by Mrs. Chapin, brought out many plans for sending the products from producer to consumer. Some very amusing experiments in sending eggs by parcel post were given, and there was a general belief that in time the parcel post would assist the farm home.

"How to Breed a Pure Herd" was discussed by Prof. C. H. Eckles. Calves thrive better on the milk that contains less cream. He thought Holstein milk better than Jersey milk for household use, but the Jersey cream possesses more butter fat. The cow is the most domestic animal; aside from the food products she furnishes us, the food given to her is returned to us as fertilizers. In case of any inflammation of the udder, the milk should not be given to an infant, and if there is much inflammation the milk had best not be used. Prof. Eckles said that the strainer, next to the milk pan, conveyed more bacteria than any other article used and should be kept very clean. He explained that "certified milk" usually meant keeping to a standard made by a medical examiner. He gave different rations, their comparative butter producing values, and passed on to "butter scoring." The rectangular shape is preferable for cutting, and the butter should not be wrapped in oiled paper, should be uniform in color and not streaked or mottled. He thought that three-fourths of the butter on the market was natural color and was cold storage butter, but that vegetable color matter was safe and was generally used in winter when foodstuffs did not color it sufficiently. Salt should be well dissolved and should not be noticeable to the consumer.

In the contest a sample of butter made by Mrs. N. L. Norton, Sedalia, received the highest score, which was as good or better than ordinary creamery butter.

The conference met at 2 o'clock and listened to a plea from Mrs. W. McNab Miller on the need of "Legislation for Children in Missouri." She told of the number of children in improper homes; of the number of children born in poorhouses, and of the number of children placed in homes and who were badly treated by those who adopted them. She urged the necessity of having a State investigator to oversee the placing of children in homes. She argued in favor of juvenile courts and spoke of the need of reformatories. She told of the need of a law for the protection of illegitimate children.

Mrs. Quick of Rockport told of "Practice Work in Rural Schools" and the hot lunch, and proved by her results and the exhibit of articles made in that line that hot lunches can be served in the rural schools.

"Experience in the Fruitville Rural School," by Miss Helen Swift of Fruitville, was read by Miss Stanley, since Miss Swift could not be present. Miss Swift's paper indicated that her work has been most successful.

Scoring of pantry exhibit was reported upon by Miss Daniels and showed a number of entries and fine quality.

Report of resolution committee was as follows: "Resolved, That we express our thanks, first, for the many courtesies extended and for the speakers furnished by the State Board. Second, for the scholarship fund donated by the State Board of Agriculture for the members of the Girls' Tomato Canning Club. Third, for the kindness of the people of Columbia in so freely opening their homes for our entertainment. Fourth, for the tea given by Mrs. Hill, who never forgets the home makers. Fifth, for the help given in the "Health Contest for Babies" by Misses Conway and Caverly. Sixth for loan of Victrola by Taylor music store, and for loan of art exhibit from Chicago and for Dr. Pickard's interpretation of the pictures.

Respectfully submitted,

MRS. CORA CHAPIN,
MRS. R. LEE ALFORD,
MRS. F. J. STURGIS.

Motion to adopt report of committee.

The business of the conference being finished the motion to adjourn was carried, and the Missouri Home Makers' Conference for 1913 was at an end.

F. PEARLE MITCHELL, Secretary.

ADDRESS OF PRESIDENT.

(Miss Alice Kinney, New Franklin, Mo)

Miss Kinney.

It is my great privilege to say to you that ever since the conference of last year the members of the executive board have been looking forward to this meeting, when we should again have the pleasure of greeting the old friends and welcoming the new ones.

During the interim you have been much in our minds and hearts, for as plans would present themselves to be worked out, we unconsciously turned to you for help—your approval means our success, without which our wheel of progress would not move forward.

In formulating the program for this conference there was such an abundance of good things to bring you that it was exceedingly difficult to include only the few; some of these have been selected with the hope of eventually creating departments which will take up special lines of work between the annual meetings, in order to give a broader outlook for the home makers and a more systematic working body between conferences.

May you feel well repaid for the sacrifices some of you doubtless have made in leaving home and its comfortable fireside, and as you turn homeward we trust you will carry our conference in your hearts and plan to come again next year.

To Columbia and her citizens we owe much gratitude; every one responded cheerfully to the demands of the program committee and expressed great interest in our success.

We trust the past year has been well with you, and though possibly many have had fuller and busier lives than ever before, have you not been happier for the fullness?

You will recall the story of Rip Van Winkle, who refused to accept the duties and responsibilities of life, but in the companionship of the Spirit of Play and his little dog, Wolf, would stroll away and forget the dull cares of life. Over his wife, Dame Van Winkle, the Spirit of Work held relentless sway—so her days were passed in ceaseless toil and from morn to night she knew no rest of either body or tongue.

Can we find somewhere between these two extremes the real spirit of home making, the happy mingling of both work and play?

As a profession, home making is at the head of the list, if the woman at the helm can grasp the full situation and is herself a business woman. In formulating her system, the home maker needs first to know her own weak and strong points and see that every effort is first given to having this dynamo, the home, perfectly adjusted in order to keep the machinery running smoothly. There will be a constant demand made upon her for oiling the many complicated parts, but proper care and foresight will save friction and many possible breakdowns. Conservation of effort and strength she will hold paramount; she will need to think well with her head before executing with her hands, and though hard work may meet her at every step, the home maker is fortunate in that she can set her own pace. In her home she is sheltered from the physically depressing competition, which is a part of the outside world, and lives in an atmosphere far more airy, sunny and wholesome than is found either in shop or office; but while in the home she needs to study how to accomplish maximum results with a minimum expenditure of time, labor and money.

If women are the spenders, and three-fourths of the income goes for feeding and keeping the family, it is a problem that requires judgment and self-restraint in marketing and shopping in order to finance the home making economically. She should seek accurate information as to general market conditions, thus getting a standard of comparison by which to measure up the local market. One clever and economical home maker has successfully put this method into practice. She first studies the needs of her household, looks up the general market, then visits her local grocer, tells him just how much she intends to spend in one wholesale purchase, compares his figures with the city market, and finds that in counting in freight and delivery she gets just as good rates, besides seeing the quality of her goods. This judicious buying means much to her family and very much to her town by keeping that amount at home.

This same guiding hand must now add a new phase to her home making, and Miss Tarbell says, in her recent book, "The most essential obligation in a woman's business is establishing her household on a solid moral basis," which requires the unremitting mental toil of mothers. Every member must be taught the importance of performing a special part in the duties of home and life; the training and education of the girls, with their quick discernment and natural adaptation, must be linked to its daily demands, for in the efficiency and success of her children the mother finds her own reflected strength. High standards of health and morals must be instilled in girls and boys alike, and the sense of judging things by their real value developed. In this way the citizens of tomorrow, with their great possibilities for healthy national growth, will be developed in the home. Some women, like some men, must have a broader field in which to express their inner life. Thus the social interests, which had their origin in the family circle, are gradually extended outward until they embrace the community, and from this new influence voluntary associations have resulted in the progressive movements of the world.

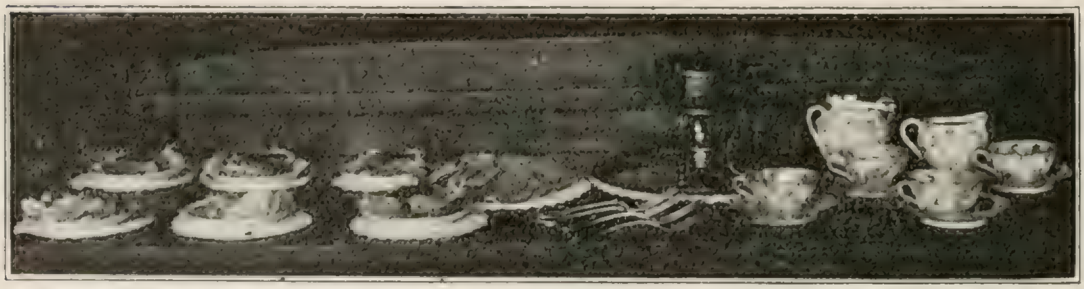
After the well systematized mechanical habits of home making have been established, we suddenly begin to realize that our success is not yielding the happiness of which we dreamed, that the call of the material world has so absorbed us that we have ceased to listen for an inner voice that was our stimulant in years gone by. It is the deadening of the spirit worn threadbare.

No greater joy ever comes to us than the satisfaction after work well done, and the daily routine of home making is not such a burden provided it is performed in the proper spirit, which makes it possible to derive even pleasure from seeming drudgery, besides offering so many opportunities for a broader spirit—if we but seek to find.

The buoyancy of youth is possible to be ours at every stage of life, regardless of the duties that may fall to our lot. You may ask how one can infuse any buoyancy of spirits into so commonplace a duty as dishwashing. The answer is, put your head and heart into it. The head will suggest plenty of hot water, which means quicker and better results; or a change of dishes, which will relieve the monotony of shape, size and color. Even these little things will brighten the operation far more than you realize, and though it may mean the using of your best company china, so much the better, for the extra care will bring into play another set of brain cells, thus relieving the old worn ones. Every woman present will bear testimony to the fact that no duty of home making offers such a rich opportunity for inspiration as the mechanical one of dishwashing. If she has a club paper or some talk to make at the missionary meeting, this is the time when she will formulate her best ideas. Or if some knotty problem of the home presents itself, here she will devise ways and means of solving it, and the result never reveals its origin by the smell of soapsuds clinging to it. The trying out of some new recipe, although it may call forth greater activities, fails to cause weariness of body and mind, because of our interest and success in the work in hand. Mental workers often find more real rest in change of subjects rather than in cessation of brain toil, and in a great measure is this true of physical efforts. Upon every side we hear of the preponderance of farm women in the insane asylum. A New York physician investigated the subject in his own state, and his report shows that only twenty per cent of the women in the New York asylums were from the farm and small towns, the cities producing the remaining part. If this be true of his state, we have reasons to believe that it is true also in Missouri.

You who love flowers, and you must grow them to really love them, can appreciate the rest that comes in caring for their wants. Just what name to give this subtle power is a problem, but since color plays so important a part in the beauty and harmony of nature's scheme, can it not be that our sleeping souls respond more fully to the brightness and cheer of their color rather than their form or perfume? You recall the woman who preserved the elasticity of body and mind by never walking when she could ride, never standing when she could sit and never sat up when she could lie down. There is a far deeper meaning in this for women than is apparent at first.

We need more systematic planning of both work and play in order to recover and retain the buoyancy of spirit and youth before we can infuse it into our home making.



THE PROBLEM OF THE DAUGHTER.

(Dr. Edna D. Day, Professor of Home Economics, University of Kansas.)

Miss Day.

I am indeed glad to have the opportunity to be back in Missouri, and especially to be with you at this Home Makers' Conference. I have read with interest the reports of your meetings since I have left, and have been very glad to see the attention you are giving to the care of young children. Today I want to talk to you about the problem of the older daughter, and the unnecessary waste of time and energy by the average girl while she waits.

Every year, as young women and anxious parents come to me for advice, I am led to a fuller appreciation of the situation. Since many of you, also, have the responsibility of giving advice to young women, perhaps you will be interested in my analysis of the problem and my suggestion of a remedy. May I begin by reading a quotation from Olive Schreiner's "Dreams?"

"All day where the sunshine played on the seashore Life sat.

"All day the soft wind played with her hair, and the young, young face looked out across the water. She was waiting—she was waiting, but she could not tell for what.

"All day the waves ran up and up on the sand, and ran back again, and the pink shells rolled; Life sat waiting. All day with the sunlight in her eyes she sat there, till, grown weary, she laid her head upon her knee and fell asleep, waiting still.

"Then a keel grated on the sand, and then a step was on the shore—Life woke and heard it. A hand was laid upon her and a great shudder passed through her. She looked up and saw over her the strange wide eyes of Love—and Life now knew for whom she had sat there waiting."

"All day Life sat waiting!" Were it only a day, or a year, or even a few years, it would not make so much difference; but when, as often happens these days, Life must wait five, ten, or even fifteen or twenty years, the problem of what to do while she waits becomes a serious one. Twenty, fifteen, ten, five, or even one of the best years of life, is too much to spend sitting idly on the shore watching the waves and pink shells. Yes, of course, but Life, as she sits there, doesn't know that it will be that long. It may not be for her. That is where the difficulty lies—in the uncertainty. Her partner may come today, he may not come for twenty years, he may not come at all!

Probably the majority of our grandmothers were married at an earlier age than our high school girls graduate today. And our mothers did not have to wait much longer. But it takes so much time these days for a man to get ready to earn a living, and it costs so much money to keep a home, that it is no wonder that the girls are kept waiting long while the men get the necessary education, money and courage.

I was much interested at home this summer at the coming to consciousness of this problem by one of our neighbors, a physician. He had always expressed strongly the belief that the home was the woman's sphere, and he had naively taken it for granted that it is always a woman's own fault if she does not enter it at once. Two years ago his only daughter graduated from high school. He had always said that she was not to go to college, but he compromised by sending her away from home for one year to another college preparatory school. Then he kept her at home for a year, with a "coming-out party," to indicate that she was waiting. Incidentally, she took private lessons in French and music, and was supposed to learn housekeeping. But the family keep two maids and the mother is in full vigorous health, so Margaret's housekeeping was a farce. There was not enough of an incentive for her to do it seriously.

Her brothers, three and six years older, have had four years at college, and two or three years professional education beyond, and are now on the lowest rounds of the professional ladder, the one a physician serving a hard apprenticeship as hospital interne, earning only his board and keep; the other an engineer in overalls doing a little more than a day laborer's work, but cheerfully, for he knows that it is but for a season. The father, knowing that his boys are not ready to marry, is beginning to realize that it will probably be some years before Margaret's partner is ready for her. But what shall he do with her in the meantime?

Among his patients are several young women in bad nervous condition, and only because they have nothing to think of but themselves and their feelings and symptoms. What to do with them he doesn't know. All they need is to be given some object in life, but how? He can't supply the husband (not that he even mentioned that). Their help is not needed at home, and it is contrary to the ideas of their family that they should work. He could not allow his own daughter to get in the same condition.

I suggested that Margaret be sent to a near-by school of domestic science, and that she take the teacher's course. Then, if need be, she could be self-supporting, and in the meantime she would be getting the training she could not get at home.

If the father had not been so outspoken against college education for women, the problem might have been postponed by sending her there for four years. It used to be that only girls with strong scholarly bent went to college. But now the number is rapidly increasing of those sent there by their parents who do not know what else to do with them while their natural mates are preparing to support them. And although many colleges and universities now offer courses in home economics, the parents and home friends of these girls surprisingly often fail to suggest to them any responsibility for making preparation for the life they hope to live, and they fail to elect home economics; they play with the college curriculum as idly as the girl in the Dream with the sand and shells at her feet, waiting, just waiting—a serious problem to their instructors.

If there is less money, the problem of what to do while she waits is generally easily settled. The girl and her family more quickly realize that she must work. However, it is generally tacitly understood that it will not be for long—and it hardly seems worth while to spend much money getting ready to work when—well, "when she may not care to do that kind of work long." She may not care to, but men hesitate these days—and many a girl finds herself in middle life doing work she doesn't like, for which she is poorly prepared, and with the prospect of continuing it the rest of her life.

This condition is bad enough, but it is not as bad as that of many another girl whose partner came early, but found her unprepared for her life work. Housework, as well as any other work for which one is unprepared, is a hard drudgery. But so accustomed are we to the myth that women instinctively know how to keep house that we often fail even yet to realize that the lack of preparation may be the cause of the trouble when the work seems unduly hard. We forget that through all the ages until very recently every girl prepared for marriage by a thorough apprenticeship at home. The girls of a few generations ago, having no schools to attend, had time not only to gain housewifely skill, but by the time they were sixteen or seventeen had commonly stored away in their cedar chests a store of house linens that would last more than a lifetime. Since the factories have taken from the homes very much of the old housework, spinning, weaving, soap making, etc., girls have been free to go to school, free to play or to work outside of the home, to the neglect of the old apprenticeship, and we are only slowly coming to realize that it was something more than instinct that made our grandmothers good housekeepers.

In the early days women were not alone in preparing for life work by the apprenticeship method. Even doctors and lawyers often got their training by working in an office instead of by going to school, and training schools for business, for engineering, for farming, were unknown. Statistics show that it pays financially for a man to take the money and years for long expensive training to be an engineer. You progressive women of the Missouri Home Makers' Conference recognize that it pays for young women to take professional training for their work in the profession of home making, but in most places the standard for woman's work in home making has decreased instead of increased. Even the old apprenticeship is discarded as unnecessary.

Of course, many girls still get a practical training at home, but it is not often as thorough as that of the olden days—the girls must do too many other things in addition, and conditions are changing so rapidly that the apprenticeship system is not so effective as it used to be. Grandmother's rules, the embodiment of family traditional experiences reaching back through generations, do not always work these days. And rules of today, unless they get back to most fundamental principles, may not work a few years hence.

The work of the home maker of today is more that of a money spender than that of a producer, as of old. Of course, it takes no training to empty a pocketbook. But, within normal limits, it makes nearly as much difference how it is emptied as how much is put into it in the first place, and as much training is needed as preparation for wise spending as for successful earning. The products on the market are constantly changing, and it requires a good knowledge of general principles to know even enough to read intelligently pure food labels.

Certainly a girl ought to spend time in getting ready for home making! But suppose she does, suppose she even takes three or four years in a college course of home economics—what then? She cannot hang out a shingle and announce to the world that, having her diploma, she is ready. No, she may have to wait a number of years longer. What shall she do? For her own health of mind, if nothing else, she would better be working. For seeing this situation, advisers wonder, "Should she be prepared for home life or to earn a living?" Some say, "Let her prepare for the money-making first, and after engagement, or even after marriage, take a few courses in domestic science." (Is this the way a successful man prepares for his profession?) Since she may never have a home to keep, why prepare to keep it? Moreover, the girl is not supposed to know she is waiting. In fact, it is the fashion in some quarters to ignore the possibilities of the partner's coming and to make ambitious plans for a career without him.

Not that the makers of these plans are not generally willing to give them up if the right man comes; but they are able to choose more independently, and so run less risk of making a serious mistake if there is something else to fill their lives if they do not marry. And no woman is free who cannot fall back upon such an alternative.

Moreover, earning money before one marries often helps to make a more sympathetic wife and a more intelligent mother. And it not only gives a woman freedom in choosing a husband, but if she can manage to maintain her skill in her profession during marriage, it forms the best kind of an accident insurance policy. According to statistics, in colonial and pioneer days it was quite common for men to have second, third, or even fourth wives; the strain of hard work killed off the wives more rapidly than the husbands. In these days the strain of increasing standards of living and excessive competition in business kills the husbands more rapidly. It is said that at present one out of every five women who have been married is without a husband. A host of widows needing some means of support!

Yes, it is very important that women know how to make money outside of the home. But there is one precaution that should be given to every girl who earns money while she waits. "Be careful not to establish such a high standard of living that you postpone the time when the man dare to come, or, perchance, that you keep him away entirely, because he cannot keep you according to the standard you have established. Don't spend all your money, much as you feel the need of all the things it will buy. Save a large proportion for your contribution to the home making, and thus hasten the time when you may begin. You have not spun and woven household linens that will last a generation, and it is only fair that you should contribute of the fruits of your modern labors." Yes, if she can work and save money she can lessen the time of waiting. The question is, how to be prepared both to earn money and to make a home. To live without a partner or with him, according to circumstances? I recommend a study of home economics as a preparation for both.

At present the demand for well-trained and experienced teachers of this subject is greater than the supply, and the demand is increasing so rapidly that it will probably continue ahead of the supply for some time to come. One difficulty we have in seeking to train teachers of this subject is that the girls are not willing to take the time necessary. Four or five years looks like a long time to the girl entering college. She certainly will be married before that time, she thinks, and she wants to do some teaching first. It is a long time, and, of course, many girls cannot afford to spend it. But many more could, if they planned for it and realized its value. Many girls spend more money at college than they need, and many more could work part of their way through college than do. Because some teachers have succeeded with only a two-years' preparation does not mean that the average girl can, especially now that standards are going up with the increase in better-trained candidates. A training that is to prepare for home making and the outside earning of money, early or late as there is need, certainly should be made as thoroughly as resources will permit. I dwell upon this point because it is the one I know most about.

But teaching is not the only outside use that can be made of home economics training. There is a demand for trained women to be matrons and housekeepers, or housemothers, in colleges, dormitories and institutions of all kinds. Hospitals are asking for trained dietitians. There is a call for caterers, artistic dressmakers, milliners and house decorators. We need women with brains, conscience and a business ability to run laundries.

"But," perhaps you say, "a girl couldn't do these things and live at home on a farm, and some of us live on farms, and we want our daughters at home. We quite agree that she should have this domestic science training, but then let her come home and help her mother for awhile."

Certainly, if her mother needs her help.

"But," some of you may say, "we don't actually need her help, but we want her company after these years of separation, and you would urge her to leave home and earn money when we have enough to keep her?"

Is she happy just to stay at home to be company? Would you be happy so? I have heard many girls tell of their difficulties in being content with this kind of life. Every one needs work in life to be happy, young women as well as young men, and no one is good company who is unhappy. However, the leaving home is not always necessary by any means. By just a little work supplementary to her home economics course a girl can learn the principles of scientific poultry raising, scientific butter making, or of home canning for the market. There are fancy prices for first-class products of these kinds, enough to tempt any ambitious girl, and if your daughter learns to do some such work as this, in addition to her home economics training, you can keep her happily at home, keeping up her practice in home making by giving her mother such help as she needs, and in addition to her own special work and earning her own special income—while she waits for the opportunity to have charge of a home of her own. And if that opportunity keeps her in the country, she will find times when she can continue her supplementary work sufficiently to keep up this practice, so in case of need she may again do it professionally.

Of course, I do not mean that women should do no other kinds of work than these I have mentioned. They may legitimately prepare to do anything the world needs doing that they can learn to do well. I was only suggesting easy ways of solving the problem.

Neither have I meant to say that all education should be vocational, though the needs of motherhood are so very broad that it is perhaps impossible to mention any cultural education that can not be counted as a preparation for home making. However, because music, art and literature are helps in home making they should not be regarded as all-sufficient. The home maker must needs be concerned for the body as well as for the soul. In fact, if the body is neglected the family often fails to realize that it has any soul. How many a young woman has spent hours and hours on her music, only to find when married that she hardly has time to dust the piano, let alone play it. If a woman loves music let her study it by all means, but at the same time let her study home economics as well, so that if she marries she may be able to do the housekeeping expeditiously and still have left time and strength for her music and the spiritual side of home making.

I have frequently noticed that a father's chief desire in the education of his daughter is that she should be trained musically, perhaps because his wife has been too busy with home duties to satisfactorily entertain him of evenings, and he would have his daughter so trained both for himself and her possible husband, forgetting that his wife has had to learn her science of home making in the hard, slow school of experience after marriage, and to spend the time that he wishes were free for music on these homely lessons. He should be made to realize that his daughter will have the same trouble if she doesn't study home economics as well as music.

On the other hand, many a mother's idea of the last of her girl's schooling is that it should be such as not to interfere with her having a good time, "for," as she says, "she will have to settle down all too soon" (i. e., she will if she marries as young as her mother did) "to the hard drudgery of life." Such a mother needs to be told that her daughter need not find housekeeping a drudgery if prepared for it professionally, and that by giving up some good times now she may hope to have time and strength for good times all the rest of her life.

Summarizing, then!

Due to increasing standards of living and the increased time necessary for a man to become prepared to earn a living, the average age of marriage is getting later and later. While she waits, the girl in society frequently gets sick and tired of life, sometimes becoming a nervous invalid if kept with nothing to do. At the ordinary college the domestically inclined but not scholarly girl often wastes both her own time and that of her instructors because she fails to elect home economics. If the waiting girl goes to work she frequently does it with only a hasty preparation that lowers the standard of woman's work and makes her discontented with her lot, but she generally lives up to her income, acquiring such high standards of living that she is not willing to marry a man who is earning, perhaps, but little more.

Parents and advisors are slow to realize the change in conditions, and frequently recommend short-sighted remedies. The lengthened time of waiting is very valuable and should be spent in preparing for home making in its broadest sense as seriously as any man prepares for his life work. In addition to this, the young woman should also prepare professionally to earn money, not only that she may be able to live happily and independently if her partner never comes, but that she may be able to choose him freely if he does, and in case of widowhood, she may have resources ready. It is easiest, in many cases, to prepare for all this at the same time by studying home economics. But on the farm some closely related work, such as poultry raising, may be profitably undertaken; and while special talents in some other directions should not be neglected, their cultivation should be accomplished by a study of home economics if one wishes time to continue their cultivation after marriage.

In every case, the problem should be considered carefully, the girl aroused, if necessary, to the value of her opportunities and the importance of her responsibilities, and, with her co-operation, plans should be made that seem best to suit her individual circumstances and prepare best for her probable future.

THE FEEDING OF CHILDREN.

(Amy Louise Daniels, Department of Home Economics, University of Missouri.)

"The particular tree of knowledge which should be planted in every home garden has many important branches, but one of the largest is that which deals with the right feeding of the human being. Even so short a time as twenty-five years ago the housewife and mother could furnish her table according to the dictates of desire and taste. Her only guide was tradition, which suffered one food and forbade another, sometimes wisely, often unreasonably. Today the burden of knowledge is hers, and the responsibilities of the housekeeper of now are not unlike those of the engineer who has charge of a trainload of people whom he must carry through the perils of modern traffic. Only an understanding of conditions will enable him rightly to perform this service. Intelligent feeding is as important to the human being as to the farm crop and animal if man is to have a fair chance in the struggle for existence. With two children of like inheritance, the child protected by a parent's knowledge of nutrition has the better opportunity for developing into sound, sturdy manhood."*

During the Home Makers' Conference there was on exhibition in the home economics building a series of typical meals for children of various ages. It was our purpose in this exhibit to show, first, the kinds of food best adapted to the needs of children of different ages; second, the amount the average child should eat, and third, the way in which a meal, prepared for a family, may be modified for the several children; for the child of two should have neither the amount nor the variety of food that may be served to the child of fourteen. Those who saw the exhibit carried away impressions that it will be impossible for us to give by words alone. We can, however, give a few of the more salient features of the exhibit and point out some of the lessons we aimed to teach through these meals.

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*Cornell Reading Course for Farmers' Wives. Human Nutrition, Part I.

Food for children must fulfill three important functions: First, it must build new tissue, for the child must develop from a small individual into a much larger one; second, it must repair worn-out tissue, for the living processes of the body bring about a certain amount of wear and tear of the body machinery; and third, it must supply the energy needed by the body in carrying out its vital processes, and in muscular work. For the building and repairing of body tissue nitrogenous materials, or proteins, represented by eggs, milk and meat, are required; while for the production of energy for muscular work the fats, supplied by butter, cream and the meat fats, and the carbohydrates, represented by starch and sugar, are used to greater advantage. Besides these three classes of materials, namely, protein, fats and carbohydrates, the body needs both water and mineral substances. The former, water, acts as a solvent for the building materials, removes the wastes, especially those that are excreted through the kidneys, and is of importance in regulating the temperature of the body through evaporation; the latter, the inorganic materials, found most abundantly in vegetables, fruit and milk, are necessary for bone formation, for regulating the osmotic tension of the body fluids and for maintaining the irritability of the living protoplasm.

Each meal supplied to the child or adult must contain these five food elements; and it is not enough that these are supplied to each individual, they must be supplied in rather definite quantities; for should an insufficient amount of any one be taken, or an excessive amount, that is, for any considerable time, the body would either be under-nourished or be made to work unnecessarily in order to eliminate the waste products produced by the excess. Fortunately for us, the body is able to adjust itself, within limits, to the amounts of the various substances supplied. If too much butter or sugar is taken the body can store them, and when an insufficient amount is fed this reserve material may be utilized. If an excess of nitrogenous material is taken that is more than is needed for immediate growth and repair, the larger part of the unused portion is excreted; the body has none or but little capacity for storing this form of food.

Under normal conditions the appetite is the guide that helps us decide how much of these various substances should be eaten; but that the appetite is not always a trustworthy guide is manifested by the frequent attacks of indigestion, experienced both by adults and children, as well as by the fact that so many adults are suffering from diseases, namely, gout, constipation, anaemia, etc., brought on by certain errors of diet. The stockman and farmer have long since recognized the importance of feeding animals so that they may do their maximum amount of work. No intelligent farmer would think of allowing his horse to wander *ad libitum* through the grain bins; and yet this is about what we are doing with our children. For the average family the fact that a child wants some edible thing is sufficient reason for giving it to him. The intelligent mother, however, appreciates that the food of the small child should, in some respects at least, be different from that of the older child, both in kind and quantity, and that the appetite should not be the guide. But because of lack of knowledge she often gives the child the wrong food, and sometimes in her endeavor not to overfeed it she does not give it enough, and then wonders why the child does not develop as it should. She is even led to make comparisons, to the unjust disparagement of science, between her neighbor's child, who apparently is allowed to eat anything and everything, and her own child who is being so carefully brought up.

In order to help mothers in working out the problem of feeding children, the various meals were prepared. The menus, together with the amounts and calorific value of each substance, are given in the following tables:

I.

BREAKFAST.

Two-year-old Child.

Menu.	Grams amount.	Grams carbohydrate.	Grams fat.	Grams protein.	Calories.
Rolled oats (strained)	5	3.3	0.36	0.83	19.85
Cream	28	1.41	1.13	0.94	19.6
Sugar	14	14.17	....	....	56.7
Toast	28	20.83	2.8	2.77	119.6
Butter	14	....	12.04	0.14	108.9
Milk	112	5.64	4.52	3.76	78.4
Totals	....	45.35	20.85	8.44	403.05

LUNCH AT 10:30.

Two-year-old Child.

Menu.	Grams amount.	Grams carbohydrate.	Grams fat.	Grams protein.	Calories.
Milk	112	5.64	4.52	3.76	78.4
Crackers	7	5.11	0.63	0.68	28.98
Totals	....	10.75	5.15	4.44	107.38

DINNER.

Two-year-old Child.

Menu.	Grams amount.	Grams carbohydrate.	Grams fat.	Grams protein.	Calories.
Creamed potatoes	28	5.22	0.03	0.62	23.6
Bread	28	14.49	0.40	2.72	72.4
Butter	14	....	12.04	0.14	108.9
Apple sauce	56	35.5	0.22	0.22	146.9
Peas	28	4.79	0.14	1.98	28.3
Cookies	14	10.15	1.98	.93	62.2
Milk	112	5.64	4.52	3.76	78.4
Totals	....	75.79	19.33	10.37	520.7

LUNCH AT 3 P. M.

Two-year-old Child.

Menu.	Grams amount.	Grams carbohydrate.	Grams fat.	Grams protein.	Calories.
Milk	112	5.64	4.52	3.76	78.4
Cookies	3	2.13	0.42	1.98	13.1
Totals	....	7.77	4.94	5.74	91.5

SUPPER.

Two-year-old Child.

Menu.	Grams amount.	Grams carbohydrate.	Grams fat.	Grams protein.	Calories.
Milk	112	5.64	4.52	3.76	78.04
Butter	14	....	12.04	0.14	108.9
Jelly	14	9.5	....	0.02	44.0
Bread	29	14.49	0.40	2.72	72.4
Totals	....	29.63	16.96	5.64	303.7
Grand totals for day	....	150.5	62.0	30.0	1,318.95

BREAKFAST.

Eight-year-old Child.

Menu.	Grams amount.	Grams carbohydrate.	Grams fat.	Grams protein.	Calories.
Orange	116	9.64	0.12	0.68	42.4
Shredded wheat	14	10.65	0.25	1.71	51.8
Sugar	14	14.16	....	....	56.6
Cream	28	0.85	11.34	0.62	107.9
Soft egg	56	....	5.96	7.4	84.0
Toast	29	20.83	2.80	2.77	119.6
Milk	112	5.64	4.52	3.76	78.4
Butter	14	....	12.04	0.14	108.9
Totals	....	61.77	37.03	17.08	649.6

DINNER.

Eight-year-old Child.

Menu.	Grams amount.	Grams carbohydrate.	Grams fat.	Grams protein.	Calories.
Creamed potatoes	87	15.66	0.09	1.86	70.8
Lamb chops	29	....	7.56	5.22	89.0
Apple sauce	58	41.56	....	1.20	171.0
Peas	58	9.58	0.28	3.96	56.6
Bread	29	14.94	0.34	2.63	73.6
Butter	14	....	12.04	0.13	108.9
Milk	112	5.64	4.52	3.76	78.4
Cookies	28	20.30	3.96	1.86	124.4
Totals	....	107.68	28.79	20.62	772.7

SUPPER.

Eight-year-old Child.

Menu.	Grams amount.	Grams carbohydrate.	Grams fat.	Grams protein.	Calories.
Potato soup	1129	20.88	0.12	2.48	94.4
Crackers	14	10.37	1.29	1.39	58.6
Bread	14	7.24	0.20	1.36	36.7
Jelly	14	9.0	0.17	0.02	44.0
Milk	112	5.64	4.52	3.76	78.4
Totals	....	53.09	6.30	9.01	292.1
Grand totals for day	....	222.5	72.1	48.7	1,714.4

BREAKFAST.

Fourteen-year-old Girl.

Menu.	Grams amount.	Grams carbohydrate.	Grams fat.	Grams protein.	Calories.
Orange	113	9.64	0.12	0.68	42.4
Shredded wheat	21	15.97	0.37	2.26	77.2
Sugar	20	21.24	....	....	84.9
Cream	42	1.27	17.01	0.93	161.8
Soft egg	56	....	5.96	7.4	84.0
Toast	29	20.83	2.8	2.77	119.6
Butter	14	....	12.04	0.14	108.9
Milk	112	5.64	4.52	3.76	78.4
Totals	....	80.54	38.22	21.78	761.5

DINNER.

Fourteen-year-old Girl.

Menu.	Grams amount.	Grams carbohydrate.	Grams fat.	Grams protein.	Calories.
Creamed potatoes	87	15.66	0.09	1.86	70.8
Lamb chops	42	....	11.34	7.83	138.5
Apple sauce	58	41.56	....	0.20	171.0
Peas	58	9.58	0.28	3.96	56.6
Bread	42	21.73	0.60	4.08	108.6
Butter	14	....	12.04	0.14	108.9
Milk	112	5.64	4.52	3.76	78.4
Cookies	28	20.30	3.96	1.86	124.4
Totals	....	114.47	32.83	23.69	857.2

SUPPER.

Fourteen-year-old Girl.

Menu.	Grams amount.	Grams carbohydrate.	Grams fat.	Grams protein.	Calories.
Potato soup	113	27.2	0.81	3.97	150.0
Crackers	28	20.74	2.58	2.78	117.2
Bread	28	14.49	0.40	2.72	72.4
Butter	14	....	12.04	0.14	108.9
Jelly	28	18.0	0.34	0.04	88.0
Cookies	14	20.30	1.98	0.93	62.2
Milk	112	5.64	4.52	3.76	78.4
Totals	....	96.22	22.67	14.34	677.1
Grand totals for day	....	291.2	93.8	59.8	2,295.8

II.

BREAKFAST.

Two-year-old child.	Eight-year-old child.	Fourteen-year-old boy.
Orange juice.	Orange.	Orange.
Cream toast.	Rolled oats.	Rolled oats.
	Cream.	Cream.
	Toast.	Toast.
	Butter.	Butter.
	Milk.	Milk.
	Jelly.	Jelly.

LUNCH AT 10:30 A. M.

Soft custard.		
Crackers.		

DINNER.

Rice.	Rice.	Rice.
Celery.	Celery.	Celery.
Milk.	Milk.	Milk.
Bread.	Steak.	Steak.
Butter.	Bread.	Bread.
Bread pudding.	Butter.	Butter.
	Bread pudding.	Bread pudding.

SUPPER.

Bread.	Bread.	Bread.
Milk.	Butter.	Butter.
Butter.	Apple sauce.	Egg.
Jelly.	Milk.	Apple sauce.
	Sponge cake.	Sponge cake.

TOTAL FOR DAY.

	Grams carbohydrate.	Grams fat.	Grams protein.	Calories.
Two-year-old child	159.78	48.00	42.2	1,285.57
Eight-year-old child	206.3	82.34	56.96	1,845.10
Fourteen-year-old boy	263.9	127.9	66.99	2,546.42

III.

BREAKFAST.

Two-year-old child.	Eight-year-old boy.	Fourteen-year-old girl.
Oatmeal. Cream. Toast. Milk. Butter.	Banana. Oatmeal. Cream. Sugar. Toast. Butter.	Banana. Oatmeal. Cream. Sugar. Toast. Butter. Poached egg.

LUNCH AT 10:30 A. M.

Banana.		

DINNER.

Baked potato. Poached egg. Strained prunes. Bread. Butter. Milk. Cookies.	Baked potato. Spinach. Beef (broiled). Baked apple. Bread. Butter. Cookies. Milk.	Baked potato. Spinach. Beef (broiled). Celery. Bread. Butter. Baked apple. Sugar. Cookies.

LUNCH AT 3 P. M.

Milk.		

SUPPER.

Toast. Butter. Jelly. Milk.	Pea pureé. Milk. Crackers. Butter. Buttermilk.	Pea pureé. Milk. Crackers. Butter. Jelly.

TOTAL FOR DAY.

	Grams carbohydrate.	Grams fat.	Grams protein.	Calories.
Two-year-old child	177.67	50.02	39.52	1,317.95
Eight-year-old boy	224.17	84.82	44.57	1,838.33
Fourteen-year-old girl	366.60	87.91	66.35	2,522.99

IV.

BREAKFAST.

Two-year-old child.	Eight-year-old boy.	Fourteen-year-old girl.
Cream of wheat. Cream. Toast. Milk. Orange juice.	Cream of wheat. Cream. Toast. Milk. Orange.	Cream of wheat. Milk. Toast. Chipped beef. Orange.

LUNCH AT 10:30 A. M.

Cocoa. Cracker.	Cookies.	

DINNER.

Baked potato. Egg. Bread. Butter Cookies. Junket. Milk.	Baked potato. Creamed carrot. Macaroni. Cheese. Apple sauce. Bread. Butter. Milk.	Baked potato. Creamed carrot. Bread. Butter. Macaroni. Cheese. Apple sauce. Cookies.

LUNCH AT 3 P. M.

Baked apple.		

SUPPER.

Carrot pureé. Croutons. Rice. Milk.	Cocoa Crackers. Butter. Rice. Milk.	Cocoa. Butter. Crackers. Rice. Prunes.

TOTAL FOR DAY.

	Grams carbohydrate.	Grams fat.	Grams protein.	Calories.
Two-year-old child	163.6	47.90	38.2	1,266.74
Eight-year-old boy	198.2	55.34	49.7	1,530.97
Fourteen-year-old girl	308.0	76.20	52.0	2,208.10

BREAKFAST.

Two-year-old child.	Eight-year-old child.	Fourteen-year-old girl.
Prune juice.	Orange.	Orange.
Rolled oats	Rolled oats.	Rolled oats.
Sugar.	Egg.	Toast.
Toast.	Toast.	Egg.
Cream.	Sugar.	Sugar.
Milk.	Butter.	Milk.
	Milk.	Butter.

LUNCH AT 10:30 A. M.

Soft custard		
Crackers.		

DINNER.

Pea pureé.	Pea pureé.	Pea pureé.
Scraped beef.	Baked potato.	Crackers.
Baked potato.	Creamed turnips	Baked potato.
Bread.	Chicken.	Creamed turnip.
Butter.	Bread.	Chicken.
Milk.	Butter.	Bread.
	Snow pudding.	Butter.
		Snow pudding.

LUNCH AT 3 P. M.

Milk.		
Crackers.		

SUPPER.

Chicken soup.	Chicken soup.	Chicken soup.
Bread.	Crackers.	Crackers.
Butter.	Bread.	Butter.
Milk.	Butter.	Pine apple juice.
	Sponge cake.	Sponge cake.

TOTAL FOR DAY.

	Grams carbohydrate.	Grams fat.	Grams protein.	Calories.
Two-year-old child	120.93	68.38	33.78	1,318.60
Eight-year-old child	166.02	79.11	47.45	1,650.35
Fourteen-year-old girl	218.87	114.5	65.30	2,319.04

The usual way of recording the food value of any given dietary is in terms of the calorie, a calorie being the amount of heat required to raise the temperature of one kilogram (a little over a quart) of water one degree centigrade. The amount of heat given off by the various food principles has been determined by the calorimeter, an instrument, as its name implies, used for determining the heat-producing value of various materials. One gram (about 1-29 of an ounce) of sugar or starch yields 4.1 calories; one gram of fat, 9.3 calories, twice as much as that given off by the same amount of sugar, while one gram of protein yields heat equal in amount to that of the carbohydrates (sugar and starch), namely, 4.1 calories.

The amount of heat given off by the body at rest and during certain forms of mechanical work has likewise been determined in terms of calories. Thus by knowing these two factors, the amount of heat given off by the body and the amount of heat produced by the various foods, we can determine, within very narrow limits, the amount of food which the body needs. By scientific investigation it has been found that a child of two requires food which yields about 1,313 calories per day; a child of eight, about 1,525 calories, and a child of fourteen, approximately 2,500 calories per day. As we have already said, the fuel supplied to the body must be given in the form of fat, carbohydrates and protein; the water and mineral matter, although necessary, yield no heat. The amount of fat and carbohydrates may vary within fairly wide limits, for these fulfill no specific function other than supplying energy to the body; but the amount of protein supplied must be rather definite, for this is used to build and repair muscle and nerve tissue, a function which cannot be taken over by either of the other two food materials. It is always better to err on the side of giving too much protein than too little, for if too much is supplied the body can eliminate the unused portion, whereas if too little is given, the body cannot develop normally. Forty grams of protein seems an average amount for the child of two, fifty grams for the child of eight and sixty for the child of fourteen. The menus recorded above have been worked out with these figures as a basis. Thus it will be seen that in menu I, for the two-year-old, the protein, 30 grams, yields 120.72 calories. This leaves 1,193 calories to be supplied by the fats and carbohydrates. In this menu the carbohydrates from the milk, bread, jelly, cookies, oatmeal, sugar, crackers, potatoes, apples and peas furnished 634.16 calories, and the fats from the butter, cream, milk, cookies, etc., furnished 558.7 calories. By knowing the composition of the various food materials, and such information is easily available, we can make substitutions, and work out a great variety of menus which will have equivalent values.

It is unfortunate, perhaps, that the quantities are recorded in terms of grams, a method of measuring less familiar to the average housewife than pounds and ounces; but if we recall that a pound is equivalent to 453.6 grams, or an ounce to 28.3 grams, and that a "pint is a pound the world 'round," which is true only within limits, we shall have no difficulty in interpreting the tables. Because the literature containing the composition and fuel value of foods records these in grams, we have chosen to do so here, in order that the housewife who desires to continue these studies further may be less confused.

In these menus no data are given to show the relation of the inorganic or bone-forming constituents to the body requirements. However, it will be observed that each menu contains an abundance of food materials, namely, milk, eggs, fruit and vegetables, which are rich in these necessary elements. If we see that the children are given milk and some form of fruit and vegetable in every meal, we may be sure that they are getting enough to supply the needs in this respect; provided, of course, that this very valuable material is not lost during the process of cooking, as is so frequently the case with vegetables which are cooked in boiling water. Recent investigation has shown that the water in which spinach is cooked contains 52 per cent, over half of the inorganic materials of the spinach; cabbage loses 42 per cent of its mineral material in the water, and carrots nearly 12 per cent. The difference in the flavor of potatoes cooked "in their jackets" and those which have been pared before being cooked is familiar to all of us. The loss of the inorganic constituents is largely responsible for the changed flavor. It is obvious that if we would get the full value of our vegetables we must devise a method of cooking which will prevent this loss.

The form in which the fruits and vegetables are supplied to the younger children is worthy of consideration. In the suggestive menus it should be noted that these are always cooked and frequently they are strained. The cooking makes the fruit or vegetables more easily digested and less likely to cause intestinal disturbances, while the straining removes the cellulose or woody fiber which so frequently causes diarrhoeal conditions which have led mothers to believe that children should not be given these foods. The bananas in these meals were thoroughly ripe. This condition is indicated by the brown color of the skin. Too frequently bananas are served in an unripe state, when the skins are either green or yellow; and in this form they are unwholesome for adults as well as for children. Mothers who would not think of allowing children to eat raw potatoes will not hesitate to give them yellow bananas. The substance, raw starch, which makes the uncooked potato undesirable, is equally undesirable in the unripe banana. During the process of ripening this material becomes changed to sugar. Therefore, if yellow skinned bananas must be used, they should be cooked before serving.

A noticeable feature of the above menus is the small amount of meat used. This is not meant to indicate that we do not approve of meat for the older child, but that there is danger in the child's taking more than is necessary. It is better that children should get the larger part of their tissue-building material (protein food) from eggs, milk and vegetables rather than from meat. On this subject Dr. Lafayette B. Mendel, an authority on dietetics, recently said before the New Haven Mother's Club:

"It has often seemed to me that many parents display an excessive zeal in foisting improper diets upon their children. They fail to realize the comparative limitations of the youthful digestive tract, while the children too soon learn to imitate the customs of their elders. This is true, for example, in the habit of eating meat, a stimulating and concentrated protein food. The colt or calf does not thrive on a diet of rich corn meal, though it may be very proper for the horse or cow. Carnivorous animals, be it noted, do not allow their young to have meat until quite a time after they have their teeth fully developed, though apparently it would be their proper food. Meat given to kittens or puppies invariably produces convulsions." It is said that cats will take away meat from their kittens when it is given to them, even up to the time when they are three months old.

The following is a summary of a recent pamphlet on the feeding of children issued by Columbia University, and may serve to illustrate some of the points which we aimed to bring out in the conference exhibit:

1. The cultivation of a rational appetite is part of the training of the child.
2. Children should be fed regularly and not too often. The stomach should have a chance to rest.
3. Children from two to five years of age need four meals a day, older ones three, at fixed hour intervals.
4. Milk is the best food for children of all ages, either as such or cooked with cereals, vegetable soups, junket, custards and simple puddings.
5. Well-cooked cereals should be served every day, but without sugar, syrup or butter. Use cereals that are made from whole grains.

6. Use eggs freely, soft cooked and not fried, and in simple cooked dishes.
7. "Children cannot thrive without fruit." Give only ripe fresh fruit in perfect condition, or that which is stewed or baked.
8. Fresh vegetables should be a part of the diet, as these are rich in the needed mineral elements. A great variety of new cooked vegetables may be served.
9. In general, provide a plain fare, of which bread and butter, cereals and milk form a generous part.
10. Do not give meat to children under eight years of age when milk and eggs are available. When meat is allowed, it should be fairly free from fat.
11. For desserts provide simple puddings, such as junket, rice, tapioca or other cereal puddings. Do not allow candy, except a small piece at mealtime.
12. Cultivate the habit in the child of drinking a liberal amount of water.

A thirteenth may well be added: Never allow the child to have tea or coffee, or even cocoa or chocolate, except when these are made with a large proportion of milk and a very small amount of cocoa or chocolate.

THE CHILD AND THE LAW IN MISSOURI.

(William T. Cross, Secretary the Missouri State Board of Charities and Corrections.)

It has often been observed how little attention is paid to the rearing of children as compared to stock-raising. This is well illustrated by the subjects that appear on the programs of the associations that are meeting in Columbia during this Farmers' Week. In New York City they had a society for the prevention of cruelty to animals long before they thought of organizing a society for the prevention of cruelty to children. The truth is, that we see and begin to study those things that are far from us first, and it is only after we get completely wakened up to our situation that we pay attention to the more fundamental proposition—the way in which people live and in which they pass their ideals and traditions on from generation to generation through their children.

But we have had a right lively awakening in Missouri lately as to the necessity of protecting the interests of children and my one reason for consenting to speak on this occasion is that I think every member of the Missouri Home Makers' Conference should take away from here the new idea of safeguarding the interests of the little ones of this generation. Last spring in St. Louis the live stock shows, the poultry show, the automobile show and the other monster exhibitions at the big coliseum gave way for the space of ten days for an entirely new kind of a show—a child welfare exhibit. Thousands of dollars were spent, and hundreds of prominent citizens interested in the project of displaying to the multitudes that thronged through the place what St. Louis charitable institutions and societies, and St. Louis homes, and St. Louis industrial establishments, and St. Louis schools were doing to promote the welfare of children. But the story did not stop there, for the exhibit showed also in shameful pictures and drastic language what St. Louis as a community and the entire Commonwealth of Missouri were failing to do for the children. Six months before that another equally large child welfare exhibit was conducted in convention hall at Kansas City, and in one day thirteen thousand parents and children crowded in to view the exhibit and to participate in the exercises. There are evidences at other points in the State that public interest in the children's welfare is growing, and many of us believe that it is going to culminate shortly in the enactment of new laws and the establishment of better institutions for the care of the children.

Any of you who may have seen the child welfare exhibit, either in St. Louis or Kansas City, I am sure were surprised by the great number of agencies and activities concerned in the proper bringing up of children. Every well-raised boy or girl stands for a good home; a mother who is free from excessive labor; a father who has a steady, paying job; city streets that are cleared of temptations and city life without immoral amusements; good libraries and school-teachers of strong character, and a score of other factors equally important. Every child has a right to good health, to sufficient play and freedom from heavy work, and a right to a sound and complete education. Children are naturally dependent, and it is our fault, not theirs, if these rights are taken from them. Nor does the story end there. Society suffers the consequences when the children are denied these natural rights. But what is the best guarantee we can give that children will have these rights secured to them? You all know—a good home. So every law we pass to improve and protect the home is in effect a children's law. The child is the expression of the home. Without children we would have no homes.

But it is well known to you that we cannot depend upon all homes being normal. The rack of industrial life, of crime and intemperance, of poverty and degeneracy, play havoc with our homes, until it is commonly observed that a large percentage of them are not ideal places in which to raise children. For this reason we have passed laws to restrain the passions and evil tendencies of men and women, and we have even had to establish immense institutions to care for the dependent, neglected and delinquent children—the by-products of our broken homes. If I should name the private and public institutions for children in Missouri you would be astonished at their number. If any of you are interested in this or in any other phase of the subject I am presenting to you and wish fuller information, an inquiry directed to the State Board of Charities and Corrections at Columbia will be cheerfully answered. It is possible to make out a pretty complete list of the various agencies that now exist for the protection of children, but I will mention only a few such agencies, and those especially with regard to which changes in our laws are sought.

The State, as represented in her laws, is the natural guardian of all children. Less than a decade ago the people of Missouri awakened to the fact that often young children, of immature mind and morality, were being thrown into the county and city jails, there to absorb from adult prisoners the ideas of worse immorality and crime. The awakening affected first the larger cities, and often the most pathetic scenes were described of the way our laws operated to the injury of children who had committed only petty offenses. As a result of that first agitation, juvenile courts have been established in the six counties of Missouri having the largest population, and they have saved for upright lives hundreds of boys and girls who merely got the wrong start. But we have stopped before the task was finished. In one hundred and eight counties children are still thrown into jail with adult criminals. The less populous counties of the State are still suffering this disgrace, and the board I represent has in its investigations discovered in the jails of the rural counties many cases just as pathetic as those found in the big cities before 1903. I need not take time to explain why children who commit thefts or other offenses should not be given the same treatment as adult criminals and be housed with them. The reason is evident to all. And you can all see also that the less populous counties should also have the benefits of the juvenile court. So the State Board of Charities and Corrections and various other organizations and associations in the State are this year asking the Legislature to extend the provisions of the juvenile court law to the rest of the State. If this appeals to you as needed legislation, I suggest that you take the matter up with your Senator and Representative at Jefferson City, and ask them to support the bill that will be introduced on this subject.

But we intend to go farther in our legislation for children. Most of you know of the recent establishment of a children's bureau as a part of the government of the United States. Some may know also of the fact that a number of states have public institutions or agencies charged with the complete supervision of the welfare of dependent and neglected children. These state bureaus have in a few cases existed for many years, and they publish statistics showing a remarkable public benefit from their child-saving work. But in Missouri there is no State system of child-saving. Children who through misfortune are left homeless or whose parents are plainly unfit persons to have charge of them are victims of an unhappy fate, indeed. To be sure, there are private institutions and associations established to care for neglected and dependent children, and these agencies deserve the highest praise for the unselfish work they are doing. But their number and facilities are not sufficient to meet the need; there is no correlation and no comprehensive plan in their relationships one with another, and it is impossible to vest in them proper authority to control this field satisfactorily. And there are juvenile courts in six counties, as I have said, which have a substantial supervision over the welfare of children. But in respect to dependent children, these courts are greatly in need of a supplementary State agency for child-placing. So there appears to be a wide breach in our laws, for the children—the wards of the State—are not being fully protected.

But the urgency of reform in this field would not be so great were it not that scores of actual instances of the need of a children's bureau have been observed. The thoughtless way in which children are thrown into jail with adults has just been pointed out, and you must remember that in the large majority of cases the boy or girl that is thrown into jail is the victim of a defective home. The county courts are continually having brought to their attention orphans and others of the type mentioned who need homes but for whom the court is not prepared to find such foster homes. Frequently the best they can do is to have them sent to orphan asylums without further supervision, and often they cannot do even so well as that. An inquiry among organizations and public officials this summer disclosed the fact that there are in Missouri between three hundred and six hundred dependent and neglected children immediately in need of the benefits of a State children's bureau. And the situations in which some of them are to be found are truly deplorable. Some dependent children are treated as though they were delinquents and sent to the State reform schools. There are a few who are really but feeble-minded who have been committed to the hospitals for the insane. And, saddest of all, there are about sixty confined in the county poorhouses, their young lives blighted by the circumstances in which the State allows them to live. The situation is even gloomier than this, for we know of many pauper children for whom the almshouse itself is responsible.

A comprehensive plan to prevent the continuance of the evils I have here merely suggested is embodied in a bill which is to be introduced in a few days in our State Legislature. The bill provides for the establishment immediately of a State bureau for children as a part of the organization of the State Board of Charities and Corrections. It prohibits the confinement, save in exceptional cases, of children in county almshouses, and it requires this bureau to receive and place in proper homes dependent and neglected children, and thereafter to supervise them as their legal guardian. This is surely a measure that should appeal not only to the sympathies of all citizens, but also to their reason. The dependent and neglected child, if uncared for by the State, is not only the object of pity to all who know of its plight, but it is usually a burden upon the public financially throughout life. To establish this bureau now is trading pennies in 1913 for dollars in 1923. So I trust that if this suggestion meets with your favor you will not allow it to drop, but will discuss it with your friends, passing resolutions recommending the establishment of the bureau in whatever societies you may belong to, and sending such memorials, as well as personal letters, to your Representatives and Senators at Jefferson City. It is only thus that they can learn of a public demand for such bureau.

THE BOY IN THE FAMILY.

(Mrs. Anna C. Windsor, Boonville, Mo.)

Solomon said, "Train up a child in the way he should go and when he is old he will not depart from it." Catholics say, "Give me a child until he is seven years of age, and do what you will, he will keep the faith." If this be true, that the first seven years of a child's life is the time for him to develop the habit of right living, right thinking and high ideals, we parents are responsible for the neglect of this important work. For in these few years our influence is supreme. We heal the wounded body and troubled hearts with our kisses, and in our arms is perfect content and happiness.

Every child is an idealist, every parent an idol. You have seen the son of four years trying to imitate the father, or the daughter trying to do the work of the mother. So we know from that that the world's conduct is judged by our own. We give of our love and service the best that we have to give, and sometimes fail to teach the children that they have a duty to perform by helping with the little duties of life, by being happy themselves, charitable and thoughtful of others. By performing these little tasks of home life with beaming countenances we are able to drive away many of the world's worries.

We are judged in the world by the big things we accomplish, but after all, it is the little niceties of life which make us really happy and equip us for battle. The child's mind is anxious for knowledge and wants to know why we sometimes say "no." As we should like to know the reasons when we are unduly criticised, so we should be ever ready to give our reasons for saying "no" or "yes." If we do not satisfy a child in this particular someone else will, possibly to the loss of our influence to some degree. The sooner he knows that "no" is final the sooner the lesson in obedience is learned, and the easier it is for him to accept conditions as they are and make the best of them. Then a battle for home and school is won and a lesson in self-control is learned which will help him to pass over the rough places in life with grace, and be the stronger for it.

We punish a child for telling a falsehood when we are often responsible for it ourselves. How? By punishing for accidents and things that he cannot help; by not investigating thoroughly and discovering where to place the blame; by not being as careful as we should be ourselves of what we say and do. I once heard a woman tell a direct falsehood over the telephone, and within a half hour punish her little son for a similar offense. If we would have our children be absolutely truthful, we must be so before them in act and deed. If we would take our darlings on our laps, and in a real mother's way take time to develop in them a love of truth, and the meaning of truth and honor to the human life and social relations, we would avoid many heartaches and humiliations. When we have made them realize this great truth the little virtues will begin to take their places in their lives, and with our encouragement and that of our friends they will set their own standards of right living and right thinking high and try to reach the goal.

The country is the ideal place to rear a family, particularly the boys of the family. There we are free from the influence of the outside world, and our influence is supreme. There we have room for all kinds of sports and games, which it is our duty to provide, and give time for this enjoyment. Here is where we often fail in our duty. "All work and no play makes Jack a dull boy," and recreation is needed on the farm as well as elsewhere. We also have room for pets, cats, dogs, lambs, pigs, ponies, etc., and the children will keep busy looking after these, and not debase their minds and hearts with those things which lead downward.

We cannot be too careful in placing the right kind of literature before our sons. We should read carefully and give them that which will create an ambitious, uplifting tendency. They should have interesting, manly stories, with good language and good morals. Boys will, by the time they are able to select their own books, have acquired a taste for good literature and will not enjoy the "Nick Carter" brand. The country boy needs this safeguard thrown around him for the improvement of his leisure moments. For good books are good companions.

A boy's room should be attractive. As a rule, the daughter's room is made a very attractive, restful place. Some think sons would not appreciate an attractive room and do not make it so. As a rule, you will find the sons just as eager to make their rooms attractive, from their point of view, as you would make the daughter's room, and they will enjoy showing it to their friends and enjoy the time spent in it. To enjoy, care for and appreciate these possessions a son must have them. He should be allowed and encouraged to decorate his own room. Gradually his taste for the beautiful will develop, and he will be making plans and working to make home more attractive in all its appointments. I have seen sons come home from a trip tired, but not content to rest until they had placed a new picture or pennant in the most effective place on the wall of their room.

The boy with musical talent is doubly blessed. It is not only a source of great pleasure to himself, his family and his friends, but it gives him a place in society, lifts him up and sets him apart. With beautiful thoughts and beautiful melodies for companions, he whiles away many evenings which would otherwise be dull and weary. These accomplishments have their uplifting, refining influence, which develop a taste for the higher things in life. I beg you to develop a boy's talent for the beautiful, in whatever line it is, for it means much toward a happy, contented future for him. This part of the country boy's life is sadly neglected.

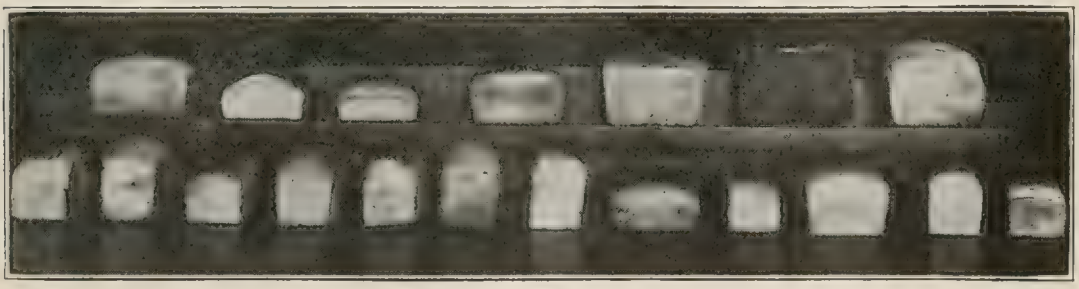
To acquire thrift and alertness pertaining to the financial side of life, they must have something of their own to sell or keep. This should be theirs to use as they choose, so long as they do not injure themselves or friends by so doing. The feeling of independence that the owning of property gives us is a necessity to every one who is ambitious, and must be developed as all other characteristics must be.

Do not deal out pennies to your son or require him to ask money for his small expenses, but give him something of his own that is not worthless, something that he will be proud of. It may slip from him quickly at first, but he will soon learn to care for his dollars and invest them profitably. Teach the boy always to go to a successful man for advice.

A lady of my acquaintance said she had to leave the farm because of the influence of the hired hands on her boys. I say, begin at the cradle to point to the star of success. First, teach a boy that it is hard for him to rise higher than his associates. Second, teach him that a true gentleman must be kind and courteous to everyone, and that his best friends and companions must be ambitious and anxious to build strong, clean, beautiful characters, and be useful, intelligent, honorable citizens. Give them the best advantages that you can, and if they have made the best of their opportunities, success will crown their efforts. Do you think the average farm hand, usually devoid of education or refinement of any sort, could influence a boy who has had a model of this kind held before him all these years? I have not found it so.

Really, the boy on the farm, studying nature, plant life, soil conditions and the different kinds of stock, is more independent than those following other callings in life.

Crops and stock increase while you sleep or take your vacation. The ever-varying labor of the farm is not tiresome, nor is it drudgery, unless we make it so. In this day of progress the successful farmer must be alert, intelligent, broad-minded, and, above all, a student. Then let us encourage the farmer boys by giving them high school advantages in their own districts, build better roads which will improve social and spiritual advantages, point out the pleasant side of farm work, make them feel that their interests are identical with our own, and they will not be leaving the farm to accept menial positions in the city.



GAMES AND DANCES FOR CHILDREN.

(Miss Rebecca Conway, Department of Physical Education, University of Missouri.)

The use of games for both children and adults has a deep significance for the individual and for the community through the conservation of physical, mental and moral vitality. Games have a positive educational influence that cannot be appreciated by one who has not observed their effects. Children who are slow to see, to observe, to think and to do, may be completely transformed in this regard by the playing of games.

"The Teddy Bears," Benton school, Columbia, Mo.

The sense perceptions are quickened, and the child is aroused to quick and direct recognition of, and response to, things that go on around him. The clumsy, awkward body becomes agile and expert; the child who tumbles down today will not tumble down next week; he runs more fleetly, dodges with more agility, plays more expertly, showing, therefore, development of nerve and muscle.

The social development through games is fully as important. Many children, whether because of lonely conditions at home or through some personal peculiarity, do not possess the power to co-operate readily and pleasantly with others. I have known of cases of peculiar, unsocial and even disliked children who have become popular with their playmates through the influence of games. The timid child learns to take his turn with others; the bold, selfish child learns that he may not monopolize everything; the unappreciated child gains self-respect and the respect of others through some particular skill that makes him a desired partner or a respected opponent. But most important of all, however, in the training that comes through games is the development of the will, that power of self-control which is the highest aspect and the latest to develop.

Now comes the question of dancing in its various forms for children. In games the child learns to control the body as a whole; that is, all the body works toward one purpose, as in a running or a jumping game. But in the folk dancing and aesthetic dancing taught to our children here the feet and hands execute different things at the same time, but all in co-ordination, thereby developing a strong sense of rhythm in the child. Thus we may see that games and dancing are extremely beneficial, for by them one is not only improved physically, but also mentally.

"Butterfly Dance," Benton school, Columbia, Mo.

Dumb-bell exercise, fourth grade, Benton school, Columbia, Mo.

The photographs of the plays and games given in this article illustrate some of the things that may be used under ordinary circumstances. They represent some of the everyday activities of the children in the Benton school in Columbia, Mo., under conditions which are fairly representative of our public schools in the small towns of Missouri.

Neither the games nor the dances need be complicated in order to get good results, and especially should those for the smaller children be simple and easy. The Danish folk dance, given below, can be taught to small children, who will always quickly catch and react to the rhythm of the music.

The directions for this dance were taken from the "Folk Dance Book," by E. Ward Crampton, which is published by A. S. Barnes & Company of New York. We are very sorry it is not possible here to print the music that was written especially for this dance.

DANISH DANCE OF GREETING.

Formation—Single circle. Partners face center, hands on hips.

Measures 1 and 2—Clap hands twice, turn to partner and bow. Turn to center. Repeat, bowing to neighbor.

Measure 3—Stamp right, stamp left.

Measure 4—Turn around in place with four running steps. Repeat from beginning.

Measures 5 and 6—Join hands in circle. Run sixteen steps to the right. Turn and run sixteen steps to left. Repeat from beginning.

Playing "Ponies," first grade, Benton school, Columbia, Mo.

The following references are given for those who are interested and would like a variety of games and dances to choose from: "Games," by Jesse Bancroft, contains directions and rules for games for children of all ages; "Folk Dances and Games," by Caroline

Crawford, published by A. S. Barnes & Company of New York, and the "Folk Dance Book," by E. Ward Crampton, published by the same company, give a great number of simple and more complex dances, with the music for each, which are suitable for children of all ages.

THE PROBLEM OF THE BOY IN THE COUNTRY.

(O. F. Field, Instructor in Physical Education, University of Missouri.)

Certainly this is a subject worthy of our consideration, for if the country boy had the opportunity in body-building exercise that our average city lad has at his very door we would all want to move to the country to raise our children. With the space available for all kinds of games and contests, and with the great amount of fresh air and sunshine, it would mean that our boy raised on the farm would outshadow the city boy many times, looking at it from a physical standpoint.

As the problem stands now, the country boy has the right to demand that more opportunity be given him for the all-round development of his physique.

I want to take this subject up from a number of standpoints and will not spend any further time discussing the disadvantages of country life, but rather the possibilities, which are much more numerous and very much more pleasing to talk about.

We are all interested in the health of our children, so first let us take up this subject from the health point of view. "Play is necessary to good health." This certainly has proven to be true in the city, and is bound to be recognized before many years in the rural districts.

Between the ages of five and twelve the boy's heart increases twelve times in size, while the arteries which carry the blood from this organ to all parts of the body increase only three times in size. This physiological condition causes an enormous pressure, which we often hear spoken of as "boy energy." For example, this might be likened to a small steam engine, but instead of steam it is energy which is being generated. This energy must have an outlet. A little boy who had lived with his sick grandmother for some time said, "Grandma, if you should die I would jump up and bust," meaning by this that he could not longer hold his energy. Oftentimes we forget that a boy cannot keep still for any length of time; he simply must play. He must relieve this pressure and play is his method.

Not only are the boy's organs growing at an enormous rate, but his bones are growing and his muscles are filling out. We all know that the harder a boy plays the harder his muscles and bones become, and when a boy has hard muscles no mother need be afraid that he is sickly. Sickly boys do not have hard muscles. All this time the boy is growing tall and lanky, and he needs those games and exercises which will stiffen his backbone and make him manly. You have all heard the expression, "that fellow's got a stiff backbone," and we infer immediately that he has been through several experiences each of which has stiffened it a little more.

It is very healthful to have a straight and stiff backbone, for a crooked and weak one means that one has spinal curvature, and a bad curvature always affects the internal organs to some extent.

There is one point that I would like to speak of which is very vital to the health of the boy but which a mother cannot fully realize. After the boy reaches the age when he feels himself becoming a man, when his voice changes and his "kid days" are over, the greatest gift of God to a boy is his power to work off in a physical way the energy that is continually being stored up within him. It is a fight, a real battle with the devil and all his forces, for a boy not to fall into secret sin and waste his strength; and for him to run, swim, box, wrestle, ride and play at all the games is one of the salvation processes for which he can thank nature. We should not discourage him, but rather urge him to use up this energy in a way that turns it into health, strength and power.

There is another phase of the boy's life which is just as important as health, and that is the moral side, or I would prefer it named the "leadership quality."

The boy of courage is the one who is admired by other boys. Any boy can help drag the bob up the hill, but there is only one who is picked to steer all the rest down, and in him all have perfect confidence. This leadership quality is brought out only in some kind of physical activity. In choosing a baseball team there must be a captain, and only one captain, the rest are perfectly willing to work with him and follow his lead. So athletics and bodily exercises play a very important part in the development of this moral courage and leadership, for when a boy is playing with other boys he is liable to be natural and will stand up for those things which he thinks he deserves. You don't always find him this way at the table or at Sunday school and day school. In these places he feels just a little as though he had to assume a more careful and unnatural manner.

This rubbing elbows with other boys and sizing himself up by his friends and putting his strength and skill against his playmates has a great deal to do with his after life, and we would do well to think more about this phase of his character.

But the problem of giving the country boy a chance, a good chance in physical training, is a difficult one to solve, because "physical training" itself means that these physical activities of the boy must be properly supervised and directed.

Bodily exercise, athletic games or play of any sort without correct supervision is worse than none. In fact, the playground authorities say in their magazines, "First get some one who knows what ought to be done, one who knows how to direct the exercises, and this will clear up many problems." Now, it is not easy in the rural districts to get leaders for boys, but nothing can be done without leaders. This is one of the most important times to think of getting young men (who have been away to college and know something about athletics) to take up a group or class of boys and keep them busy. Public interest must be aroused, and this can be done in many ways. Women's societies in some large cities were the first to approach the subject of playgrounds. Newspapers all over the country are recognizing the boy problem. Sunday schools and churches are ready to listen and scheme in order to keep their boys with them. School boards will co-operate in a movement of this kind. The Young Men's Christian Association will put in a county secretary who will make it his business to work with boys if the county will support him.

Our boys and girls of today cannot grow up to be the citizens which we are striving to make them without true leadership which encourages participation in those activities which tend to strengthen the mental, physical and moral side of their development.

THE BABIES' HEALTH CONTEST.

(Mrs. Flora Hartley Greene, Columbia, Mo., State Chairman of the Health Contest for Babies.)

The department of "Care and Culture of Children" made its first appearance this year in our Home Makers' Conference. One large room in the Gordon Hotel building was set aside for this work. In it was arranged a display of: 1, Clothing for children from infancy to adolescence; 2, specimen meals giving properly balanced rations with necessary amount to furnish needed calories for children aged two, eight and fourteen years; 3, constructive toys and playthings; 4, sixty books that every child could read with profit;

5, a victrola to illustrate the music that our homes should possess; 6, demonstration on the care of the sick; 7, a baby health contest.

The baby health contest was, as its name indicates, an attempt to select from children between the ages of six months and four years those who were the best physical specimens, not from the standpoint of beauty, but from that of physique and health. The thirty babies entered were divided into three classes and a first prize awarded in each class. The following score card was used:

James Gene Smith, Weston.

George Ellis, Appleton City.

Carl Smarr, Columbia. First in the one-year-old class.

Official Record. Head and neck.	Measurements.	Individual score.	Standard score.
1. Circumference of head			6
2. Length .... width			4
3. Eyes—size, shape, setting			6
4. Ears—size, shape, position			4
5. Nose—size and patency			4
6. Mouth, tongue, palate, tonsils			6
7. Teeth			5
8. Neck and larynx			3
Trunk and Limbs.			
9. Weight			6
10. Height			6
11. Chest			6
12. Waist (at navel)			2
13. Symmetry of body			2
14. Forearm and hand			3
15. Calf and foot			3
16. Muscular poise in walking, sitting, and power of handgrip			6
17. Skin—quality, coloring, etc			5
18. Skeletal symmetry and proportions			3
Mentality and Alertness.			
19. Disposition			2
20. Expression and attention			8
21. Nervous balance and co-ordination			10

STANDARD MEASUREMENTS FOR BOYS.

The facts are from Holt's "The Care and Feeding of Infants." "The weight of girls is on the average about one pound less than boys. They are about the same height."—Holt.

At Birth—Weight, 7½ pounds; height, 20½ inches; chest, 13½ inches; head, 14 inches; teeth, none.

At One Year—Weight, 21 pounds; height, 29 inches; chest, 18 inches; head, 18 inches; teeth, six.

At Two Years—Weight, 26½ pounds; height, 32 inches; chest, 19 inches; head, 19 inches; teeth, sixteen.

At Three Years—Weight, 31 pounds; height, 35 inches; chest, 20 inches; head, 19¼ inches; teeth, twenty.

Stanley Backus, Columbia. First in the two-year-old class.

Will L. Nelson, Jr.

Robert Oliver Pearman, Columbia. First in the three-year-old class.

In the first class, which included babies from six months to eighteen months of age, Carl Smarr was given first place. In the second class, including those from eighteen months to thirty months of age, Stanley Backus was given first place. In the third class, that for babies of thirty months to forty-eight months of age, Robert Pearman was given first place.*

This health contest work has already attracted the attention of county fair associations, and it is hoped that a number of baby health contests may be held this year at county fairs as well as at the State Fair.

RULES FOR THE PRESERVATION OF THE HEALTH AND LIFE OF THE BABY.

1. Follow a fixed and regular daily schedule for the baby's feeding, exercise and play, rest and sleep, and body functions.
2. The clothing must protect the neck, arms and legs; it should be loose and comfortable; the underclothing of light soft woolens.
3. Mother's milk should be the food of the baby. When bottle-fed, use pure sweet cow's milk modified under the physician's directions.
4. Games, romps and other baby exercise favor growth, and give discipline in self-control.
5. Do not allow flies to touch the baby, his food, or his playthings. They carry the germs of diarrhoea, typhoid fever, tuberculosis and other death-dealing diseases.
6. Disease germs often enter the baby's mouth on his "pacifier."
7. Never use "soothing syrups," which generally contain poisonous sedatives and habit-forming drugs.
8. A child trained to regular habits and in good health never cries except when hungry, tired or uncomfortable.

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*All babies whose pictures are used in this article made creditable scores.

THE GIRLS' TOMATO CANNING CLUB.

(Miss Alice Kinney, Chairman of Girls' Tomato Canning Club, New Franklin, Mo.)

The home makers decided at their 1912 conference to make some effort to interest our Missouri girls in growing and canning tomatoes in order to get in touch with some of the wide-awake girls over the State, and hoping thus to obtain a proper basis upon which to offer a scholarship for the short course in home economics, now open to girls in the State University.

Primarily, they wanted to stimulate the girls to furnish the homes with fresh and canned vegetables, thus enabling more families to live better and at a lower cost.

The Agricultural Department at Washington, D. C., gave us much valuable assistance in furnishing all needed literature of instructions and record sheets, besides seed and counsel.

A number of girls over the State responded promptly, but only the bravest remained in the contest to the end. Many reported failures were due to the late spring and loss of plants, the greater number for the lack of home support, and in one instance the space of ground was refused the girl after she had joined the class.

A report card was used similar to those formulated by Mr. Bradford Knapp, who has charge of the Girls' Canning and Poultry Clubs, organized under the auspices of the Bureau of Plant Industry, United States Department of Agriculture. Each girl reported on the cost of production of her tomatoes under the heads of rent of land, preparation of seed bed, the cost of seed or plants, of planting, of manure and fertilizers, of cultivation, of gathering fruit, of cans, labels and supplies, of canning work, and of marketing canned goods. She also reported her receipts as those from fresh vegetables, from canned vegetables, value of that used at home and receipts from other products. Then the total cost and expense were figured and the net cost per can found.

Martha Blume, New Franklin, winner of short course scholarship.

Mary W. Harris, Fayette.

Beryle Hocker, Fayette.

In addition, each girl reported on the size of plot, the kind and depth of soil, character of the subsoil, the preparation of the soil and its condition when the plants were put out, the method of cultivation, the dates of planting, transplanting, staking, first bloom, first fruit and of ripening.

The results of some of the tomato canning work was shown at a county fair; the premium was given for the highest scoring both in the whole and stewed tomatoes.

Again there was a display at the State Fair, and the same exhibit is now here awaiting the final scoring by a committee, who will also take into consideration the record kept by these girls as they tilled the soil and tended the crop all through the long summer of 1912.

The executive board of the Home Makers' Conference decided that they could give $25 toward a scholarship this year if it was possible to interest the Missouri State Board of Agriculture in contributing $25, which they most graciously did. Hence, our scholarship must be known as the Missouri Home Makers' and State Board of Agriculture Scholarship.

As this meeting of the Home Makers' Conference would be too late to select the successful girl, it was necessary to make the decision at once, and the executive Board awarded it to Miss Martha Blume of New Franklin.

Miss Louise Stanley, director of home economics in the State University, met with the Howard County Girls' Tomato Canning Club at New Franklin during the summer of 1912. As Miss Stanley's time was too limited for a practical demonstration in canning, she commented on some of their canned tomatoes and gave them much valuable instruction for their future efforts and formulated the following score card, not only to be used by the judges in their contest-scoring, but also to direct the attention of the girls to the vital points—which are necessary in all high standard products:

TOMATOES CANNED WHOLE.

	Possible score.	Score made.
Shape	15	
Firmness	15	
Color	15	
Proportion of liquid to solid	15	
Taste	30	
General neatness	10	
Total	100	

Name and address of contestant.

TOMATOES CANNED NOT WHOLE.

	Possible score.	Score made.
Color	25	
Proportion of liquid to solid	25	
Taste	40	
General neatness	10	
Total	100	

Name and address of contestant.

The Missouri Home Makers' Conference is making every effort to extend this work and hopes to get in touch with many girls over the State.

HOT LUNCHES IN RURAL SCHOOL.

(Mrs. Fannie Quick, Rockport, Mo.)

Mrs. Quick.

To many teachers it would no doubt seem almost an impossibility to try to have hot lunches in the rural school, but I have demonstrated the fact that it can be done. I admit that it takes energy, and not only energy, but a deep interest in the dear boys and girls who are entrusted to our care for eight or nine months in the year.

I feel that when a teacher enters her school in the fall she should enter it with the full determination of making that the very happiest, best and most successful year of her life. I know full well of the many things we meet that seem as barriers to us, but they are not. It is only in the seeming. I know you have told your boys and girls many times that "Where there is a will there is a way." Now take that to yourself.

The first question with you will be, "How did you manage the work?" I will answer it. I had been in the same school two years and the third year I introduced cooking. In the first place, about two weeks before the end of my second year of school a member of the board asked me to take the school the next year. I did so. I also asked permission to be present at the meeting when the directors met to contract, etc. I went to the meeting and was given an opportunity to speak. First, I asked permission to take a little time from the regular lessons, to give the girls that education which I feel they are so much in need of, not so much during school days but in after years. The board very kindly permitted me to do this. I then asked if we might give an ice cream social to raise the necessary funds to equip our kitchen, and to this they consented. So it was all settled as far as the board was concerned. We gave the social, and it was a success in every way. We went right to work, curtained off one corner of our room (about eight feet square, I should think) and in this was one window that gave us sufficient light. Then on Saturday we went to town and bought our furnishings, which consisted of a two-burner oil stove and oven and a kitchen cabinet. These with a few cooking utensils, a long table which we already had, and a small safe which I had at home, completed our kitchen furnishings. Then each pupil brought a knife and fork, plate, cup and saucer. There were also a few other dishes which we had to spare. Then we laid in a supply of provisions, such as flour, sugar, coffee, tea, spices, and flavorings, lard, etc. I said to the girls, "There are three things I am going to teach you to make, if nothing more, and those three things are to make good light bread, biscuit and corn bread." I have had said to me, "Oh, I think mother can teach the girls at home!" But hear me, the poor tired mother hasn't time. However, my girls were just as enthusiastic as I, and were delighted to do the work. I had only five girls that were old enough to take up the work to any extent. We did not have hot lunch every day, only about three days in the week. The day before we were to have dinner we would elect two girls to do the cooking and two to wait upon the table, and at this time we would decide what we were going to have. Perhaps each pupil would bring a potato, and what a big pan of potatoes we would have! Some would bring butter. And let me say right here that this is where I linked the home with the school. The mothers became interested and would phone and ask me if we couldn't use a little milk or some eggs or

Manual Arts in Mrs. Quick's rural school.

butter. Of course, we could always use such things. Then the girls would come early, put their meat on, then pare the potatoes, and at recess drop them in with the meat and by twelve everything would be done. Sometimes they would prepare some drop dumplings, lift the meat and potatoes out, put in the dumplings, and by the time the table was arranged these would be done. Other dishes were also prepared. Then we would eat. When we had finished our meal each pupil would carry his own dishes to the kitchen, so you see that when we had all finished there was but little left to do in the way of clearing up the table. Usually we did not have time to wash our dishes at this time, but would do that after school closed in the evening. Mothers came to me after we had worked awhile and said, "I am so glad you have taken up this work; my girl can now take so much work off of me."

The sewing class in Mrs. Quick's rural school.

All this can be done, teacher, without a doubt. I had no trouble about tardies, no irregular attendance. I think six tardies would cover all that I had during the three years. It is worth while if it helps us in our attendance. I had no failures at the end of the year. And above everything, it helps the girl when she wants to make a home for herself. Should the duty of homekeeping fall to the girl's lot just as she had finished her education, perhaps from the high school or maybe from the university, would her algebra, Latin, Greek or German, without more practical training, be of any benefit to her at this time? None at all; she would be as helpless as a babe, and it would be very difficult for her to face the responsibilities she was called upon to assume.

Mothers and fathers are crying aloud to the public schools to do something that will arouse the boys and girls and make them feel and realize what life means to them. The call is insistent that some way be provided for directing their energies in the right channels. The child learns to do by doing. We have three educations—the education of the head, hand and heart.

I have been speaking of the education of the hand. In the practical work in the school the parents become coworkers with the teacher. This seems education worth while. True, we have to shake off the moss which has been clinging to our backs for ages in order to catch the spirit of this new common-sense use of the public schools.

Mrs. Quick and her class in Domestic Science.

But when those boys and girls leave school, if they do not possess a love for work and have a practical knowledge of the work going on about them, it will not be the fault of the school using this plan. This plan of education is based on the new conception of the purpose of the public school. The old conception was that the schools were intended to train the boys and girls to be ladies and gentlemen, cultured in arts and science. The new conception is that the schools should prepare the boys and girls to be useful, capable citizens, equipped to take a hand in the practical affairs of life.

TEACHING COOKING IN THE FRUITVILLE RURAL SCHOOL.

(Miss Helen Swift, Fruitville, Mo.)

It is no longer necessary to argue about the necessity for teaching cooking in our schools. We have only to consider ways and means. Here is how we have tried to solve the question at Fruitville. Our school is a typical one-room building with four windows on each side, a door in front directly opposite the flue. Teachers who have struggled with the arrangement of such a room will realize the difficulty of adding a kitchen equipment to its furnishings, especially since it was deemed advisable to do most of our work with a wood stove. This problem we solved by pitching a 12x14 tent just across the platform in front of the schoolhouse. This tent we have arranged as a real kitchen, with a stove, table and cupboard. With the exception of these three articles our equipment cost less than fifteen dollars. It contains nothing that might not be found in an ordinary farm kitchen. Perhaps it would seem meager to some city teachers, but if they had watched the children's interest in and surprised admiration of such articles as the toaster, egg beaters and vegetable press, they would know that there is a great opportunity with very simple equipment. All our equipment, including the tent, we owe to the generosity of Col. Jay L. Torrey, president of the Missouri State Immigration Society, whose interest in the State of Missouri as a whole, and in the boys and girls in particular, is second to none.

Perhaps the hardest problem after that of equipment is that of securing the time. I have solved that in this way: We follow the program in the State course of study, omitting second grade reading and spelling after the morning recess, and combining third and fourth grade arithmetic, thus saving twenty minutes.

The fire in the cook stove is laid before school, lighted at recess and fed by one of the younger boys, who finds in this activity a reward for well-studied lessons. At 11:40 the pupils who are responsible for the preparation of that day's menu go to the kitchen.

The others remain at their desks for study or for discussion of the work of the next day. I endeavor to have as many children as possible share these discussions, and to save time often give recipes for a whole week at one lesson. For instance, one week may be given up to cream soups, another to quick breads, etc. At noon we are dismissed and by twenty minutes past twelve sit down to a lunch made palatable by the hot dish prepared by our cooks. The problem of cleaning up and dishwashing has so far been easy. The younger children are only too eager to show their skill.

As to the general outline of our work, in the fall we took up canning with the object of using the fruits and vegetables so preserved for our own lunches later in the year. We collected the different kinds of nuts with which our woods abound, talked of their dietetic value and used them in simple combinations. Before Christmas we made candies and packed them in boxes of our own manufacture and decoration. Just now everyone is butchering, so we will take the opportunity to study meats.

As you see, we are not following any special order of study, but utilizing the material at hand.

The correlative value of the study of cookery cannot be overestimated. Suppose a group composed of a girl from the A class, one from the B class and boys from the C and D classes to be making cheese fondue according to the recipe in Williams & Fisher's textbook; such questions as the following will touch most of the subjects they are studying: In what part of the digestive tract is cheese digested? What country in Europe is famous for its cheese? What is the principal cheese-making state? If a pint of butter weighs a pound, how much will one-fourth of a cup weigh?

In fact, cooking correlates itself with every study from D numbers to A history and physiology.

I am sure it is only a question of a few years until cooking will be taught in all rural schools, and I hope that the example of Fruitville school will encourage others to go and do likewise.

THE SHORT COURSE FOR WOMEN IN THE UNIVERSITY OF MISSOURI.

(Miss Louise Stanley, Home Economics Department, University of Missouri.)

The second year of our short course in home economics commenced January 6, 1913, and twenty-one young women have been enrolled for this work. We feel that after this year we will have passed the experimental stage with this course and are ready to broaden out and look for much greater increase in numbers. It seems wise, therefore, to let the women of Missouri know what we are doing and what we are aiming to do.

The fireless cooker saves time, energy and fuel.

This course was first established in January, 1912, with the aim of supplying to the young women of the State a type of training similar to that furnished the young men by the short course in agriculture. Too long have we considered that the most important of all professions, home making, could be entered into without any previous training. We are now realizing that if our homes are to keep pace with the progress of the times we must train our young women for their duties in them, both that they may perform those duties more efficiently and that they may carry to them that knowledge which bridges the gulf between drudgery and systematic, orderly work.

With this end in view, we have selected from our regular course those subjects which bear most directly on home life and have adapted them to the needs of the short course student. These courses have been supplemented by courses in agriculture in which the women might be interested, such as dairying, poultry raising and home gardening. For a more detailed outline of these courses you are referred to the short course bulletin, which will be mailed on request.

Some dresses made by the short course class.

It is a little difficult to estimate the benefits which can be derived from such a course. If we were discussing any profession, such benefits could be expressed in terms of dollars and cents. It is rather hard to do this when we come to home making, because so few homes are run on a business basis that figures are hard to obtain. However, it stands to reason that there are great possibilities to save money in the home by wise and economical management. The greatest gain, however, comes to the well-trained home maker, not in terms of dollars and cents, but in the form of greater health and happiness of the family, less sickness, longer

The thermometer saves time and means more accurate work.

lives for all, greater opportunity to work and greater opportunity to enjoy. These are things for which we would give any amount of money if we did not have them, and for those of us who have them no amount of money can buy them from us.

This year we have among the twenty-one students enrolled five scholarship students: Miss Edda Mae Bixlee of Benjamin, Mo., who has won her scholarship in a grange contest; Misses Maggie Todd, Bess Crouch and Bess Needham of Neosho, Mo., who won the scholarships offered by McGinty Brothers in a voting contest; and last, our own scholarship girl, Miss Martha Blume of New Franklin, Mo., who won first prize in the tomato contest work and received as reward a fifty-dollar scholarship, half of which was given by the Missouri Home Makers' Conference and half by the State Board of Agriculture. Next year we hope that other contests may be held in other parts of the State and that as a result this opportunity will be offered to a larger number of young women.

Short course class in Home Economics, 1913.

Both last year and this we have had the young women with us for the seven weeks immediately after the Christmas holidays. This we have done in order to have them here at the time of our annual conference. We have found this to be objectionable because of the difficulty in getting rooms for students for such a short time, especially when this time cuts into two semesters. It seems advisable on this account to have the course another year for the seven weeks immediately preceding Christmas.

Let us anticipate a little and see what we are planning for another year. We hope to be able to add more courses and to broaden out a bit—a course in preventive medicine has already been promised us. To those courses we already have will be added more advanced courses in home economics, but just what form these courses shall take we cannot say at this time. We would like suggestions, for you know better what is needed than we do. Tell us what you want for another year. Also you know the names of many young women who might be interested in this work, young women just through high school, young women in the homes, who will find that the time so spent is much more than justified. Will you not help us by sending the names of these young women? This year many names came to us after the course had started. In a course which lasts only seven weeks it is important that all names should be in early and all students enrolled as soon as possible. Send in the names now and we will get then on our mailing list and will see that each one receives information regarding the short course work.

A LESSON IN DRAFTING PATTERNS.

(Miss Nelle Carter, Department of Home Economics, University of Missouri.)

Materials needed for drafting are: Several yards of wrapping paper that is a yard wide, a foot ruler, a yardstick, a tape measure, a pencil, a few pins, a yard of cotton tape and a large table.

A SHIRT-WAIST DRAFT.

All measurements should be carefully taken. Remove belt and collar if possible and pin a tape securely in place to indicate the normal waist line. The following measurements will be needed and should be taken as directed:

Bust.—Stand behind the person being measured and pass the tape measure over the fullest part of the bust, one inch below the hollow of the arms. Place a pin at the top of the tape measure at the center back. Add three inches to this measurement.

Distance of Bust Line from Base of Neck.—From the large bone at the base of the neck measure to the pin placed in the center of the back.

Length of Back.—Measure from the bone at the base of the neck to the waist line.

First Width of Back.—Place a pin three inches from the bone at the neck. Measure the width of the back at this point, from arm to arm.

Second Width of Back.—Measure from the center of the back, or where the pin was placed in measuring the bust line, to the hollow of the arm or to a point where the underarm seam should come.

Underarm Seam.—Measure from the hollow of the arm to the waist line.

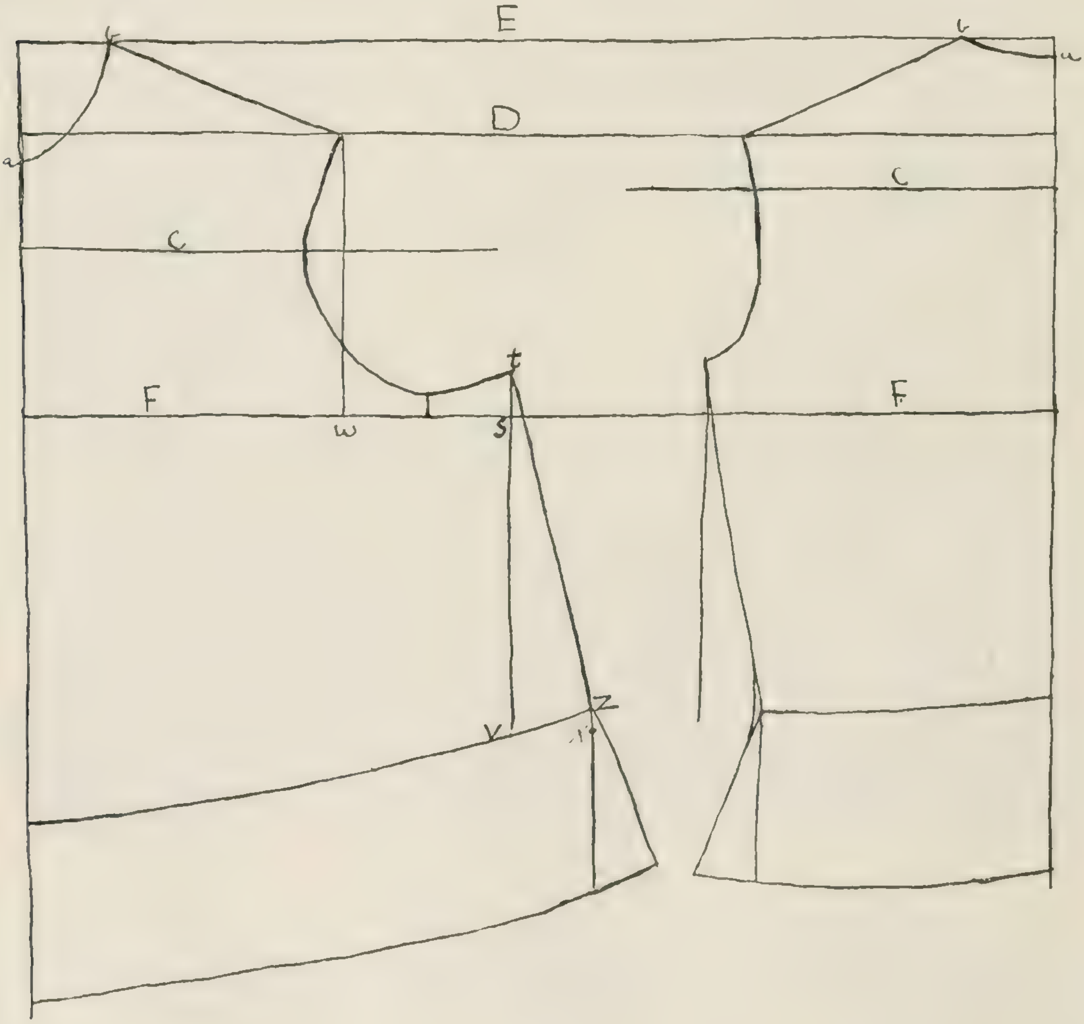


Fig. 1.

Shoulder.—Measure from a point one inch back from the top of the shoulder to the base of the neck.

Neck.—Take an easy measurement around the base of the neck.

Width of Chest.—Measure across the chest from arm to arm two inches down from the hollow of the neck.

Length of Front.—Measure from the hollow of the neck to the waist line.

Directions for Drafting the Back of the Waist.—Draw a line one inch from and parallel to the top edge of the paper. Mark this line E. (See Fig. 1.) To form the neck curve, measure on the edge of the paper three-eighths inch from E and mark the point (a), and on line E, at a distance from the edge of the paper equal to one-third of one-half of the neck size, mark a second point (b). Connect these two points with a curved line.

Two inches down from line E draw a line parallel to E, extending entirely across the paper, and mark it D. This line indicates the amount of slope of the shoulder. Measure the distance of the bust line from the point (a), which represents the bone at the base of the neck, on the edge of the paper, which is the center back of the pattern. Through this point draw a line entirely across the paper parallel to line E. This is the bust line or line F. A third line should be drawn three inches from (a) and parallel to E. This line need extend only one-third the distance across the paper and is marked C.

To Form the Shoulder Line.—With (b) as a center, draw a radius equal to the length of the shoulder, intersecting line D. Connect this point of intersection with point (b).

To Get the Widths of the Back.—Measure on line C one-half of the first width of back; measure on line F, the bust line, the second width of back, namely, the distance from the center back to the underarm seam. Raise this point one inch, because this measurement was taken one inch below the hollow of the arm. Mark this point (g). Form a curve for the arm size by connecting the points which determine the widths of the back with the end of the shoulder line.

To Form the Lower Part of the Waist.—From (g) draw a line perpendicular to the bust line and the length of the underarm seam. Place a point (h) one and one-half inches in from this point (depending upon the number of gathers desired in back), and connect the new point (h) with point (g). Correct the measurement for the length of the underarm seam. Measure on the edge of the paper from point (a) the length of the back. Connect this point with point (h) by a straight line. This forms the waist line for the back.

From point (h) drop a perpendicular line four inches long. Place a point two or three inches out from the bottom of this perpendicular line (the exact amount depending upon the size of the hips). Connect this point with point (h) by a slightly curved line.

It is easy to fit a form.

Draw a line from the end of this slightly curved line parallel to the waist line to the center back. Modify the sharp angle formed at the waist line by drawing a slightly curved line from a point one-half inch above the waist line to a point one-fourth inch below.

Directions for Drafting the Front of the Waist.—Lines E, D and F are extended across the paper from the back.

To Form the Neck Curve.—Measure on the edge of the paper from line E one-third of one-half of the neck size plus five-eighths inch. This locates point (a). Measure on line E from the edge of the paper one-third of one-half of the neck size plus three-eighths inch. This locates point (b). Connect these two points with a curved line.

To Form the Shoulder Line.—Follow directions given in drafting this line in the back.

To Draft the Arm Curve.—Two inches down from point (a) draw a line C parallel to E, extending only a third of the distance across the paper. On this line measure one-half of the chest measurement. Subtract the second width of the back from one-half of the bust measurement and measure the remainder on the bust line, marking this point (s). Raise this point one inch, for the same reason that a similar point was raised in drafting the back. Call the new point (t). Drop a perpendicular line from the end of the shoulder line to the bust line and mark the intersection (w). Half way between (s) and (w) erect a perpendicular line one-half inch high. Draw a curved line starting from the end of the shoulder line, touching the point on line C, the top of the half-inch perpendicular line, and the point (t).

To Draft the Lower Part of the Front.—Drop a perpendicular line from point (t) and on this measure the length of the underarm seam. Mark this point (v). Measure from point (v) two inches out. This locates point (x). Connect points (x) and (t). Correct the underarm seam, naming this new point (z).

Measure from point (a) the length of the front on the edge of the paper and connect this point with point (z) to form the waist line. Finish the bottom of the front as directed for the back.

To Allow for Seams.—One inch over the shoulder, one and one-half inches for the underarm seam and one-fourth inch for the neck and sleeves.

For the Sleeve.—Any sleeve pattern that fits the individual may be used.

A FIVE-GORED SKIRT DRAFT.

The measurements needed are:

Waist.—Remove outside belt, pin a cotton tape securely in place. Take this measurement comfortably tight.

Hip.—Take this measurement loosely over the largest part of the hips, usually five inches down from the waist line.

Lengths.—Measure center front, center side and center back, from the waist line to the floor. Subtract from this length the distance the skirt is desired from the floor.

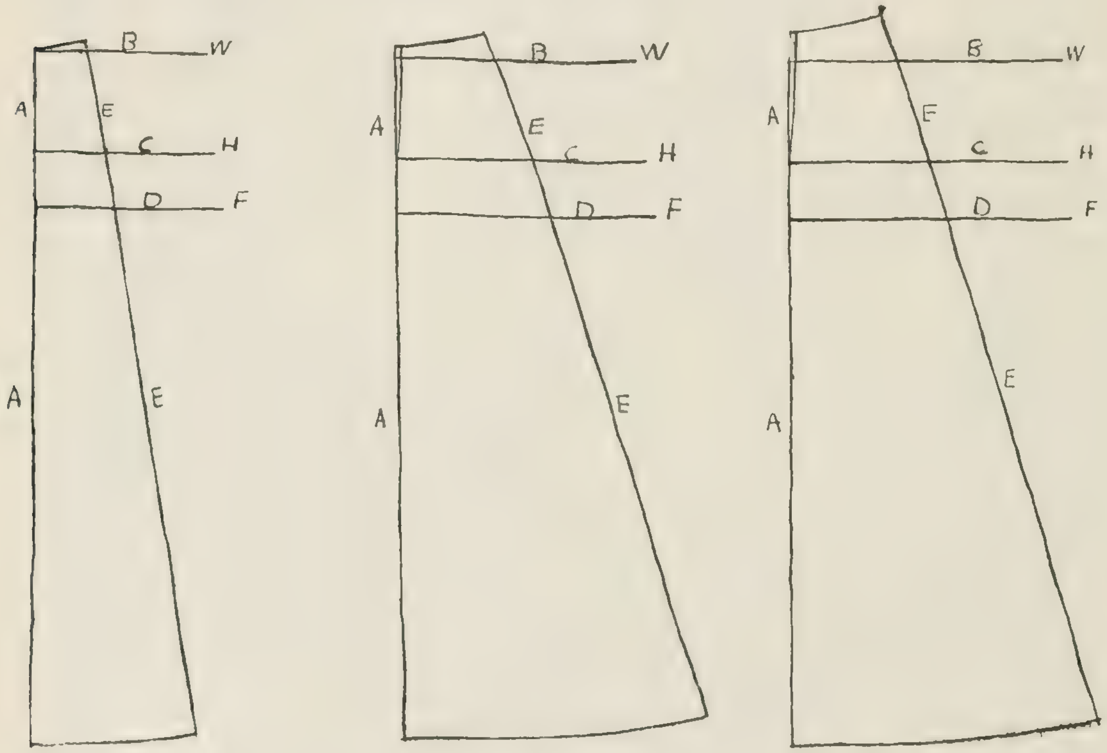


Fig. 2.

Construction Lines.—Use the edge of the paper as line A for the front gore, but where flares are to be added place line A three inches in from the edge of the paper. Draw line B three inches from the edge of the paper for the front and side gores, but five inches for the back gore. Measure down on line A from line B the distance of the hip line. This is usually five inches, but may be more, depending on the size of the person. From this point draw line C parallel to line B. Measure down on line A three inches from line C and draw a line parallel to C. Mark this line, which is the flare line, D. (See Fig. 2.)

DIRECTIONS FOR DRAFTING GORES.

Consult the table for proportions for the gores, measuring out on the hip line and the flare line the required amounts. Form line E, the bias side of the gore when cut, by placing the edge of a yardstick on the points indicating the width of the hip and the amount of the flare and extend above line B. The width of the bottom of the gore depends on the desired width of the skirt at the bottom. Raise the top of the gore at the lines A and E, according to the given measures in the table. Connect these points with a slightly curved line. For the side and the back gores measure in on this curved line from line A one-fourth inch, and two inches down on line A measure in one-eighth of an inch. Connect these two points and extend the line on down to the intersection of lines A and C. Measure the length of the gores on lines A and E according to the measures taken. Curve the bottom of the gores by connecting these points measured on lines A and E. Use a tape as a guide or draw free-hand.

TABLE FOR DRAFTING FIVE-GORED PATTERN.

	Front gore.			Side gore.			Back gore.		
	W	H	F	W	H	F	W	H	F
Five-gored skirt.	1/10 + 1/4″	1/10	1/10 + 1/4″	1/5	1/5	1/5 + 1″	1/5	1/5	1/5 + 1½″
Raise top.	A		E	A		E	A		E
	—		½ inch.	½ inch.		1½ inches.	1½ inches.		2½ inches.

Explanation of Table.—W, waist; H, hip; F, flare.

W $^{1}/_{10} = ^{1}/_{10}$ of waist measure.

H $^{1}/_{10} = ^{1}/_{10}$ of hip measure.

F $^{1}/_{10} = ^{1}/_{10}$ of hip measure and the amounts added at the flare line are subject to change with the prevailing styles of skirt.

ART AND HANDWORK IN RURAL SCHOOLS.

(Miss Ella Victoria Dobbs, Department of Manual Arts, University of Missouri.)

Miss Dobbs.

The word "Art" to most people stands first of all for pictures, and next, perhaps, for certain fanciful decorations which are not at all necessary, but are supposed to make the things decorated "pretty." From this standpoint we may or may not use art in our surroundings as inclination prompts us. A great many people never think of art as a universal element which enters into every most commonplace part of our daily lives whether we think about it or not. Art is the element of beauty which enters into every thing we do, which we either use or abuse at every turn. It has more to do with the form and proportions of things than with the decorations placed on them. It has much to do with the clothes we wear and the houses we live in. It concerns the food we eat and the way it is served. Some one has said, "Art is the best way of doing whatever needs to be done," and if this is true the teaching of art in any school is not an extra or special subject, or a sort of luxury, but a very important necessity.

In discussing some of the possibilities in the study of art and handwork in the rural school, the writer assumes that the teacher of the school has had some training in this field, since no teacher can be called well equipped without it. It is also assumed that the teacher's "good taste" is equal to or a little above that of the best families in the district, since no wise and thoughtful school board would select a teacher who was not capable of at least maintaining the standards already reached by the community. The study of art in the school ought to awaken in each pupil a desire for a higher standard of living and give him some practical assistance in realizing his desire. It should, therefore, be very closely connected with the everyday affairs which make up life. The work of the classroom should go on under the most beautiful conditions possible and should constantly suggest ways of making life outside the school more attractive. The writer is well aware that in many schoolrooms, and particularly in some country schools, there is so little that is attractive that the word "beauty" seems a foreign term in connection with them. The writer is also quite sure that this condition does not need to exist even in the poorest district, if the community wish it otherwise.

Cleanliness is next to godliness and is also a very important element in beautiful living. The first lesson in school art ought to concern neatness in every detail of school life. A clean and tidy schoolroom will help the individual pupils to be thoughtful in the care of their persons and personal belongings as well as in their actual book lessons.

Very often an air of untidiness in a schoolroom is due to the lack of places to put things. Inadequate shelf room makes it necessary to pile books on the teacher's desk and the front seats. The lack of a safe cupboard in which to store lunch baskets makes it necessary for each pupil to guard his own by placing it on the floor under his desk beside his muddy overshoes. These things ought to be provided as a part of every school equipment, but if they are not they suggest the beginning place for art and handwork. The available spaces may be studied and suitable and tasteful shelves built in at very small expense in money and a little effort which will more than pay for itself in comfort. The designing of such shelves to meet the needs of the class and to suit the space into which they fit will furnish art study of more real value than any offered in the ordinary drawing books. The making of the shelves and other needed furniture by the pupils under the guidance of the teacher will provide profitable experience, not only in art and handwork, but in various related fields.

Schoolroom walls, particularly in the country, are frequently lacking in every element of beauty. A dingy plaster wall ornamented by a few cheap prints and advertising calendars plus some cracks and breaks in the plaster is not apt to inspire the class with any greater desire than to get away as soon as possible.

The study of art may be applied to the walls in the selection of paint or paper of a good tone in tan, green or gray; something soft and restful which will give a plain background for a few good pictures as the class is able to acquire them. If no funds are available for the purchase of necessary materials, enough can generally be raised through entertainments and socials which are pleasurable as well. Often the actual painting and papering can be done by the older pupils and volunteer help from the patrons. If the teacher and the progressive mothers combine their energies a way will be found, and the work will give opportunity for developing ideas of good taste and raising the common standards to some extent.

Curtains, table covers, draperies for book shelves, perhaps a couch and cozy corner for the occasional sick child if space permits, offer further opportunity for the application of art to simple handwork problems. Such work will be full of suggestions for the homes of the pupils also.

In directing work of this sort the teacher who is well qualified for her work has a wonderful opportunity for helping the children and the community to appreciate the restfulness of soft colors; to emphasize the great beauty of plain paper on the walls as compared with the unrestfulness of spotted papers in strong colors; to emphasize the restfulness of plain hangings of denim, crash, or burlap, with or without some simple border decoration, as compared with large flowered cretonne and similar materials; and to introduce into the school various sorts of work which will help meet the immediate needs of the community.

The application of art and handwork to practical problems will not stop with the inside of the schoolhouse, but will extend to the grounds and outbuildings. If trees, vines and shrubs are planted by the children it will not only add to the attractiveness of the place, but give them a personal interest in their care and a greater feeling of ownership in the school. There are great possibilities in this field, once the work is undertaken, and the hardest part is in getting started. The laying of board or concrete walks in the yard is within the powers of most country school groups, and no one improvement will add more to the comfort of the children, especially if the yard is often muddy.

The desire to live in a better way concerns the things we eat as well as the place in which we live. The wide-awake teacher will be interested in the lunches the children bring and the way in which they are eaten. Cold lunches are poor things even at best, and very frequently consist of most indigestible combinations. With a little managing and perhaps a small outlay, in almost any school arrangements can be made for cooking at least one hot dish, such as a soup or cereal, a custard and sometimes a vegetable. If the teacher is qualified, she will be able through this means to emphasize a few fundamental points in the choice and preparation of foods. It will also be possible to give some attention to the manner of serving and eating the things cooked. When it is a common problem she can call attention to certain points in table manners, in which some of the children may be lacking, much more freely and with better effect than when lunch is a matter of individual baskets. It will generally be possible to set a table large enough to accommodate a part of the group, and with the right sort of leadership it will be real sport as well as profitable experience to take turns in serving and being served and learning how to do both in the most approved fashion.

If the immediate surroundings in the school are not in great need of improvement, the study of art and handwork will find a profitable field in designing costumes and in planning houses and the appropriate furnishings for various rooms, the children applying their efforts to their own homes and their own clothes.

Work of this sort presupposes a teacher who is well qualified for her work. She need not be a specialist in either manual arts or home economics, but she should have good taste, reinforced by some knowledge of what is really good from the art standpoint, some knowledge of woodworking tools and materials, and some practical experience in cooking and sewing as well as knowledge of food values. Above all, she must be possessed of a strong desire to serve the community. With this last qualification she will be able to overcome many other deficiencies.

Another and scarcely less important factor in the success of a study of art and handwork, as outlined above, is the attitude of the mothers of the district. If there is a home makers' club it will, of course, be actively interested in co-operating with the teacher and helping her to direct her energies toward the greatest need with success. If no such club exists, the opportunity is waiting for one or two of the most progressive mothers to get together and make a beginning somewhere. The getting together and the starting will be the hardest part. Once begun with a determination to succeed, ways and means will develop as needs are faced. There are few obstacles too great to be overcome by a devoted teacher and a group of progressive mothers, and it is comforting to remember that those who "never make mistakes never make anything else."

SCHOOL SANITATION.

(Louise Stanley, Department of Home Economics, University of Missouri.)

Miss Stanley.

Why do we want our schoolrooms clean? Perhaps you think it makes little difference. You can study quite as well and learn just as much whether the room is clean or dirty. Suppose you agree to try it the clean way this winter and see whether or not it makes any difference. See if you are not able to do more work, keep in better health, and study and learn more than ever before. How many of you would like to try it?

The first thing for you to do then will be to get "cleaned up." Can you not set aside a "clean-up day" or a "good-health day"—they really mean the same—when you can all come and see to it that everything in and about the schoolroom is thoroughly cleaned? How many of you are willing to help and think you can bring from home the necessary cleaning materials? You must allow sufficient time before this day so you can plan all the work systematically and discuss just what needs to be done.

What is meant by cleaning systematically, anyhow? It means considering what there is to be done, listing and planning the order of work so that each duty will fit into the next, and so that the performance of any one duty will not interfere with what has gone before and what is to come after. This is what the housekeeper does when she plans her work for the day or the week. Each duty is done at the most economical time and in the most economical way. Thus she is enabled to accomplish the most in the least time.

Now let us stop and think of the different things which must be done in order to put your room in order. The floors, the walls and ceiling, furniture, stoves and windows all need attention. We must decide what is to be the order of this work and how each operation is to be done.

Why remove the furniture first?

When should the furniture be cleaned if left in the room?

Why clean the ceiling before the walls?

What should be the last portion of the room to be cleaned before returning the furniture to the room?

In systematic cleaning the first step is the removal of all the furniture. A bright, clear day should be selected so it will be possible to move it onto the porch or out into the yard. This should all be thoroughly cleaned before it is returned to the room, so we might just as well discuss in the beginning the treatment it should receive. One group of children can then be at work on the furniture while another group is cleaning up the interior of the building.

Care of Furniture.—In the home we never apply water to furniture. When it needs to be dusted it is wiped off with a cloth which is dampened very slightly or to which a trace of kerosene has been added. A little furniture polish may be used and rubbed well into the wood. In any case, no oil or polish should be left on the outside to dry and gum, as it serves as a means of collecting dust.

As for school desks, they are probably so soiled and have been used by so many different children that wiping off with even a damp cloth will not suffice. They should be thoroughly scrubbed. We want them thoroughly clean and sanitary, even if it be at the expense of the varnish. All the cracks should be stopped up as far as possible and the rough places made smooth with sandpaper. This will make it very much easier to keep the desks clean. After the desks have been put in the best possible condition no one will be guilty of defacing them in any way. The carving on a desk does not add in any way to its beauty, but makes a place for the lodgment of dirt and germs.

Renovation of Furniture.—If there is time and the money is available, some or all of the furniture may be refinished. In order to do this it is first necessary to remove the old stain. This can be done by a scraper after the furniture has been washed, if very dirty. It can be given a final smooth finish and the varnish removed from the corners by the use of sandpaper. The stain can then be applied and, finally, the varnish put on, which can be rubbed with sandpaper to any degree of dullness desired. Most of us do not care for shiny furniture, and it is certainly much more difficult to keep in proper condition than that with a dull finish.

Cleaning of the Stove.—The stove should receive attention next. If the weather is sufficiently warm, the stove, if not too heavy, can be removed to the outside, and by cleaning it there much dirt and unnecessary dust be kept out of the room. It should be thoroughly cleaned in every part. Any parts which are broken should receive attention at this time. If the stove is very dirty it should be washed with soap and water. If any parts are rusted, the rust can be removed by soaking with kerosene, remembering, of course, that kerosene catches fire very easily and should never be used while there is a trace of fire about it. After it is thoroughly cleaned it should be well blackened and polished with a cloth or brush. Once the stove has been gotten into the proper condition it can be easily kept so. If anything spills on the stove wipe it off with a piece of paper. A cloth should be kept, by means of which the stove can be wiped each day. If this is done it will not be necessary to polish the stove very often.

Coming now to the interior, did you decide which portion should receive attention first? A safe rule to follow is to commence at the top and work down. In this way water and dust from above will not be spilled over the clean portion below. This means we must commence with the ceiling and work down the walls.

Cleaning the Walls and Ceiling.—Wipe down the ceiling and walls carefully with a broom covered with a soft cloth. If the walls are painted they may be wiped off with soap and water. On this account paint is better for walls that are likely to become soiled than calcimine, whitewash or wall paper. On the other hand, calcimine and whitewash are cheaper and can be replaced more frequently than the paint. A very good plan is to paint the lower portion of the wall, which is the portion more likely to be soiled, while the upper portion may be treated in one of the other ways.

If the walls are to be refinished in any way you should be very careful as to the selection of your color. By the selection of your colors you may add to the beauty and the apparent warmth and light in the room. Which colors do you like best? Is there any reason for your likes and dislikes in regard to color? Do some colors in a room make it appear warmer than others? Some cooler? Divide colors into the warm and the cool colors. Can you see any reason for some colors being called warm and some cold?

Which colors make a room seem lighter?

Why are they important in a schoolroom?

Is it important to choose carefully the colors of the walls in your rooms at home?

We know that those colors which are connected in our minds with fire make a room seem warm. They are the reds and yellows, while the blues and greens make a room seem cool, probably because of their connection in our minds with water, ice and the cool forests. Light colors, especially a cream yellow, reflect the light better and make a room seem lighter, while the dark colors absorb the light rays and make a room appear correspondingly darker. Psychologically, colors affect people differently. As a rule, we may say that it is better to select neutral colors—soft grays, gray greens and soft brown.

Washing of the Windows.—The windows should be carefully washed. Dirt and grime on the window glass may cut off a large proportion of the light, and may mean serious trouble for some of the students later in life. For cleaning the windows you will want plenty of clean water, some soft clean cloths and clean newspapers. A little kerosene added to the water makes it easier to clean the windows; a small amount of soap or washing soda may be used, but it is not advisable, as it may streak the windows. Dip in the washing cloth and squeeze almost dry. Rub the window with the damp cloth, rinsing it frequently, until perfectly clean. Rub dry with a clean soft cloth, and polish with a piece of soft newspaper which will leave no lint. This should leave them clean and shiny.

At the same time the window frames and the window ledge should receive attention. They should be wiped with a cloth dipped in soapy water or water to which a small amount of kerosene has been added. In case they are very dirty a scrub brush may have to be resorted to. If this is necessary, it should be done before the window glass is washed.

Nothing should be tolerated on the outside of the windows which will hinder their being frequently cleaned. If a screen is desired there to protect the window from stray rocks or balls, it should either be put on in such a way as to enable it to be removed easily or should be on a hinged frame. Any of the older boys could construct such a hinged frame.

The first step in the cleaning of any floor is to sweep it well. This should always be done in such a way as to raise as little dust as possible into the air, and at the same time collect as much as possible from the floor. The broom should be held firmly, not too tight, and you should sweep with short strokes, keeping the broom close to the floor. Turn it edgewise to clean out the cracks and corners.

As a means of preventing the dust from rising into the air, various materials may be sprinkled on the floor before sweeping, which, as they are swept up, tend to accumulate and hold the dust. For a bare floor sawdust to which a small amount of oil has been added is used, while for sweeping a carpet, damp tea leaves or moistened shreds of newspaper. The oil would, of course, ruin a carpet.

The trash should never be swept out into the dooryard, but should be carefully collected and burned. After the floor has been swept it should be scrubbed.

For scrubbing you will need a scrub brush, a soft cloth, some soap and sand or some sand soap. The spots should be removed first of all, since they will be difficult to locate when the floor is wet. Next proceed working over the floor, a small portion at a time. First scrub it well with the soap and sand, then wipe it up with the cloth dipped in the clear water; finally wring out the cloth and wipe the place as dry as possible before proceeding to a fresh portion of the floor.

Now you are ready to return the furniture to the room. Since you spend so large a proportion of your time in this room it is worth while that this furniture should be arranged as attractively and conveniently as possible. In arranging the desks we must be guided by the position of the stove and the windows. No desk should be too close to the stove, and where possible, the light should come from behind or from the left side. Pictures always add to the attractiveness of the walls. They should not be hung too high, but in a position which would be about on a level with the eyes of a person standing. Growing flowers always add to the pleasing appearance of any room. It is nearly always possible to have on the teacher's desk a bowl of bright-colored leaves or berries. Try it and see how much the appearance of the room is improved.

Now, if the inside of the house is to be neat and clean, the outside should be in keeping with it. This work need not be done in one day, but a little time spent each day will soon put it in good condition.

All the weeds and coarse grass should be cut. These should be raked into a pile with the leaves and trash, which accumulate about a school yard, and burned in an out-of-the-way corner. Why not keep one place for this purpose and burn there each day the accumulations of trash and rubbish? All the rocks should be put in a ravine or in an out-of-the-way corner.

If there are no trees or shrubs on the school grounds set out a few lilacs or other shrubs that may be found in the community. Trees should be set out, taking care that an open space is left for play.

There should be a screen in front of the outhouses. Probably the most indecent and disgusting thing found in Missouri today is the average closet at the rural school. It will cost but a few dollars to put a screen in front. Vines can be trained to grow over this, and will add much to the general appearance of the yard.

The interior of these houses should receive attention. They should be thoroughly scrubbed out. Two of the older students, a boy and a girl, should be appointed to see that these are kept in a proper condition.

Prevention of Unnecessary Dirt.—When everything has been cleaned well, the task of keeping it clean will be much easier. Still, it will not keep itself, and each pupil must help. So what are the ways in which we can help do this? Of course, each can have a part in the daily care. If each has just one little task, probably not taking more than five minutes for its completion, the work will be easier for all. But can we help in any other way? Yes, each should do his or her part in keeping things clean.

How many of you bring in unnecessary mud on your shoes?

How may this be prevented?

Have you any scrapers at the door to help in the cleaning of your shoes?

Have you anything upon which the shoes can be wiped?

How many of you are careful about this at home?

Are you careful in using the blackboard, not to scatter the chalk dust any more than possible?

Daily Care of Schoolroom.—The most important item in the daily care is, probably, the attention to the stove. At least, the stove in itself may be the source of so much dirt that it has a large share in determining the order of work. Preferably, it should be attended to the evening before. As soon after school is out as possible, the ashes should be shaken down and removed, and if the stove is sufficiently cold, a fire laid for the next day. While this is being done the room should be well aired. Clean the blackboard and the chalk tray. Sweep the room thoroughly. About once a week a mopping with hot water should follow the sweeping.

Are you careful not to scatter scraps of paper over the floor?

Have you a box or basket in the schoolroom where waste paper can be put?

What happens to the papers and apple cores outside? Are they allowed to be scattered at will, or is there provided some thing into which they can be put?

Are you careful in coughing or sneezing to put a handkerchief or the hand in front of the mouth to prevent the escape of particles of mucous, and perhaps also bacteria, into the air?

These may seem like little things, but they may do much to add to the attractiveness and healthfulness of your schoolrooms and grounds, and a little thought on the part of each one will materially lessen its daily care.

Dusting.—

What do we mean by dusting, anyhow?

Is it scattering dust or collecting it?

With which can it be done best, a feather duster or a soft cloth?

What will enable the cloth to take up the largest amount of dust?

What should be the treatment of the duster after it has been used?

How long a time after sweeping should we allow before the room is dusted? Experiment at home and find out how long it is after the sweeping of the room before the dust is completely settled.

Do we raise more dust in sweeping a bare floor or a carpeted one?

Why do we use carpets?

What would you suggest as the best method of treating the floor of a bedroom, living room, kitchen, dining room?

Are there any processes which go on in the home that tend to raise the dust?

Suggest the time in the course of cleaning when these operations should come and the best method of carrying them out.

In the schoolroom you will probably all agree that it is best to leave the dusting until the next day. By that time the dust will have settled completely. So in the morning, after the fire has been made, every article of furniture and every portion of the room where dust might accumulate should be gone over with a dampened or oiled cloth, the dust collected and not scattered over the room again. The cloth, if the dust is excessive, may be rinsed out occasionally, the water being wrung from it as completely as possible. At the end of the dusting the cloth should be rinsed out well and hung up to dry. Now the room will be fresh and clean and ready for the children.

Ventilation.—Is there anything else we must watch? We may have the dust all removed from the air, but unless the ventilation is good, that is, unless the air we are breathing is constantly being replaced by fresh air from outside, we will not get the greatest amount of good. You all know how stuffy and close the air in the schoolroom feels when you come in from the outside. There are two reasons for this—we keep the air too hot and we do not let in enough air from the outside. As a result the air becomes, as we say, close, and the children are drowsy and stupid. Try letting in a certain amount of fresh air and keep a thermometer hanging in the schoolroom. Watch it carefully and see that the temperature does not go above 65 degrees Fahrenheit. Try this a few days and notice how much fresher each one of you feels. Another common practice in schoolrooms is that of keeping a can of water constantly on the stove to supply moisture to the atmosphere. This is not necessary and may be harmful. You all know how much more oppressive high temperature is when the air is full of moisture. Each of you is constantly breathing out moisture. You can see your breath on a cool morning, because this moisture condenses. When you add to this moisture a constant supply of steam from the vessel on the stove it contributes to the general oppressiveness of the room.

The Drinking Cup.—One more point—and that is the question of the common drinking cup. A familiar sight in every country schoolroom used to be the water bucket in which always two or three dippers reposed. Each child who drank from the dipper and then returned it to the bucket ran the risk of transferring to it any bacteria which may have been present in his own mouth. By the time one bucketful of water is used in this way there is opportunity for the pollution of the water by quite a mixture of bacteria. In the schools we are substituting the individual drinking cup, but in many of our homes is not the bucket with the common dipper still a part of the kitchen equipment? Are the bacteria any less dangerous because they come from a member of your own family? The feeling that one is willing to drink after a member of his or her own family, when not after strangers, is probably responsible for the spread of infectious diseases through families and in part for the old theory that tuberculosis is hereditary.

COMMERCIAL GARDENING.

(Mrs. J. B. Rich, Fayette, Mo.)

A few days ago I was asked to write briefly on "Commercial Gardening." I fear my remarks will be of little value to any one, as my gardening has not been very extensive and not particularly commercial.

Each year when I begin my gardening my intentions are to sell sufficient vegetables to cover the entire expense of the garden. But I usually do quite a good deal more than that. As a rule, my garden pays for the sugar used during the fruit season, and furnishes the groceries through the summer months for my family of six. Besides what I use and sell, I give away plants, and share the vegetables with those neighbors who have no gardens. My special efforts are for the extra early garden and for the very late one.

The usual time for putting in tomatoes is about the tenth of May, or after all danger of frost is over. My experience is that they can be started earlier than this. One spring I noticed a lot of volunteer tomato plants and began to take special care of them. I put out some hotbed plants at once, some the same size and some twice the size of the volunteers. I worked the plants just alike, but the hotbed plants were most all chilled to death. The few that did stand the wind and chill were far behind the volunteer tomatoes, which were not affected by frost and chill any more than the grass and plants about them. From this I got an idea for the next year's garden which enabled me to have the earliest garden and the first tomatoes in my neighborhood.

I fertilize my garden heavily, and plant the tomato seed just where I want them to grow. If very cold, I turn a glass jar over the seed until they begin to sprout. I leave the best plants in the hills and transplant the others. These plants, which have not been disturbed, yield their fruit a week or ten days earlier than the transplanted ones. Tomatoes that are grown rapidly, or forced, are much more perfect in shape and flavor.

I have but little trouble with cauliflower, which I manage to have for the market both very early and very late. The early cauliflower must be planted very early, in order to mature properly before the hot weather begins. Several times I have had cauliflower for sale as late as the latter part of October. To do this, I put out the plants late in the spring, care for them just enough to let them live, until about the middle of September, when we have cool weather again. I then begin to cultivate it, and soon I have plenty of beautiful white, crispy heads.

My experience is that early and late gardens are the only ones that are commercially profitable. Like the "early bird that catches the worm," so is the gardner who first tempts the public with his early spring vegetables. I have only a small plot of ground in town, and, of course, use all of it. I use the fence on all sides for my bean poles, and as fast as one vegetable is used I put another in its place.

HOW TO MAKE A GARDEN SERVE THE TABLE THE WHOLE YEAR.

(Mrs. Samuel W. Ravenel, Old Franklin, Mo.)

In every vocation of life, in every feature of economics, whether governmental, commercial, social or domestic, economy is the recognized sheet-anchor of success. The government recognizes it, the contractor or tradesman pays close attention to it, each regarding it as an absolutely necessary attribute of a successful result. Then why should not the careful and practical housekeeper, the only true home maker, also recognize and practice a like prudent management in the affairs over which she is sole mistress and on which the economic welfare of her household depends? She undoubtedly should, and the very initial point, the one that most particularly concerns her, is the relation of the vegetable garden to the home, the pantry, the kitchen, and finally, in the natural course of events, the table. It is at the table where the members of all well-regulated families meet for pleasure and refreshment three times in every twenty-four hours—first, as the morning sun rises to remind man of his daily toil and to fit him for its duties; again, as twelve times the brazen tongue of time tolls the hour, to refresh him in his allotted task; and again, as the vesper bell speaks the evening hour, to reward him for a well-spent day and to fit him for his well-earned eight hours of rest. Thus is carried out the proverbial eight hours for rest and recreation, eight hours for toil and labor and eight hours for sleep and the natural recuperation of one's energies.

And now comes the economy of the garden, and how it affects the economics of the home, especially the table.

In the first place, the garden must be arranged with a view to utilizing the beneficial effects of the rays of the sun, a twin necessity with soil fertility, the two God-given helps to the garden, in order that the growing plants may get the quickest and richest benefits of its life-producing light and warmth.

As a general rule, the rows should run north and south, as most of the rays during the day will then shine into and permeate to the roots of the plants as needed for sprouting, and then later for producing the bloom, and ripening the fruit, berry or grain, which is a necessary feature of every productive garden.

Again, the arrangement of the garden should be such that the lower plants or vines should be at the south side, as otherwise such vegetables as corn, okra, butter beans and other such high-growing plants would soon shade the lower vines and bushes, such as dwarf peas, salsify, carrots, spinach, parsnips, cucumbers, lettuce, and even tomatoes, and rob them entirely of the rays of the sun, so essential to their needs for growth and production. This arrangement is as simple as it is desirable, but it must be started right, for it can not be changed after the crops are growing.

Another very desirable arrangement is to have crosswalks, especially east and west, to prevent trampling over beds and rows, which will eventually result in walks in inappropriate places, destroying plants already growing.

Another feature that should be suggested before going into the detail of the garden is the rotation of such crops as peas, sweet corn, lettuce, radishes, etc., as will furnish them to the end of their natural season, or to killing frost. For instance, we had last summer eight rotating plantings of corn, furnishing the table fresh corn from early in June to the day of such frost as killed the plant. This holds good even with early and late potatoes, tomatoes, cabbage, beans, etc., which the garden furnishes our table plentifully and abundantly for eight mouths from the earliest maturity to the time when Jack Frost calls a halt on all plant life in this latitude. In other words, time your several plantings so that one production will succeed the other as near as possible. As one ceases producing the other starts, and keeps the table constantly supplied during the entire season for each vegetable.

Our garden is about 90 by 240 feet—approximately a half acre in size. So it will be seen that a rotated garden need not be very large, but of a size that may be easily afforded on any farm or on many city lots.

We will first take up the winter vegetables, which being usually low plants, are on the south side of the garden. Included in this list are salsify, parsnips, carrots, beets, white curled endive, turnips, etc. We do not refer especially to winter cabbage, onions, Hubbard squash and potatoes, as every one knows the culture and winter care of them.

The parsnips and salsify are left in the ground until freezing weather, or all winter, if not needed. The beets are usually of a long variety, especially adapted to winter use and keeping. Late in the fall a supply of these winter vegetables can be dug and put in the cellar for convenience, and if they are covered with damp earth they will keep fresh and plump until used. In this mild winter we are still using ours from the garden. This holds good for all roots and tubers.

A great many object to the tedious cultivation all summer of such minute plants as salsify, parsnips and carrots, but we have found a plan to save much of this hand labor while plants are small. Our plan is to mix the seeds and thus plant with them a good sprinkling of radishes, and as you daily pull the radishes you weed and work the other growing plants. This has worked very successfully with us.

After planting such spring vegetables as lettuce, radish and spinach our next seeding is green peas, using both dwarf and tall varieties. This crop we rotate so as never to be without them on the table until regular summer vegetables are abundant, or from early in May to the last of July. In 1911 we planted two quarts of Nott's Excelsior and gathered between four and five bushels. Of course, the surplus of this crop was canned for winter use, using the steaming process.

Too much cannot be said about the simplicity of the steaming process for canning, which process we have used most successfully and conveniently. We believe it possible and practicable to can almost anything by this process and to save time and labor by its use.

At a cost of two dollars we have a home-made steaming vessel. It is made of heavy galvanized iron. It is ten inches wide by fourteen and a half inches long and twelve inches deep. It has a perforated false bottom, with short legs to raise it off the bottom of the vessel. On this false bottom the jars are placed to prevent burning or scorching. The cover is close fitting and braced across with strips of the same metal to prevent warping.

It holds six-quart or half-gallon jars and is invaluable and indispensable. In this way we make a kind of wholesale job of canning, and often, for the sake of economy, place the steamer on the kitchen stove while the cook is preparing dinner. Oftentimes we use the coal oil stove to avoid the heat of the cook stove, preparing the vegetables in a cool place, or out on the porch, not touching them until steamed.

The potato crop for summer use is put in just as soon as the weather will permit—provided it is the dark of the moon or on St. Patrick's Day (?). Last year a bushel of Early Triumph seed supplied an abundance of potatoes all summer for a table of eight, with a good deal of company, and quite a supply sent to city friends. Two bushels of Burbanks (not in this half-acre, however,) filled the cellar bin for winter use, so that practically three bushels of seed potatoes planted will supply the house the whole year.

Corn and beans are planted every two weeks, corn until the first of August and beans until the last of the same month. This year we had eight plantings of corn and had roasting ears until frost, and the same can be said of the beans. These are two of a housekeeper's main stand-bys for summer use, and are so easily grown that they need never fail. For the first crop of corn we plant "Peep O' Day," a very early variety, and for our main crop "Country Gentleman," a most palatable and toothsome corn.

Tomatoes are another most satisfactory and reliable help to the housekeeper, as they are used in such a variety of ways, both raw and cooked. For this half-acre garden we plant from eighty to one hundred plants, which give us an ample supply for unstinted table use, with a surplus allowing from 125 to 150 quarts canned for winter use. We plant them four feet apart each way, and tie up to stakes or mulch with straw to keep off the ground.

In addition to the vegetables previously referred to, we plant all the others usually found in gardens, such as okra, lima beans, sweet potatoes, Swiss chard, cabbage, cauliflower, squash, simlins, cucumbers, cantaloupes, melons, onions, beets, eggplant, etc., so that it is nothing unusual for this garden to be represented by seven or more vegetables on our table.

As most housekeepers know, these vegetables have their special seasons, and run from asparagus and pieplant in early spring to such as afford a supply until terminated by frost. This year we cut a beautiful head of cauliflower as late as the twentieth of November.

Another very necessary attribute of a successful and profitable garden, both from the standpoint of practical convenience and economy, is a small and inexpensive hotbed. Ours is nine feet by six feet, divided into three sections the nine-foot way, making three apartments 6 by 3 feet. It faces southwestwardly and is sloped about one foot in its six-foot length towards the sun for admitting the rays of the sun its full length. It is covered with old sashes.

To make a hotbed, buy one or more old sashes from any carpenter shop. Make a topless and bottomless frame that will be covered by the sashes. Make the frames about eighteen inches deep. Mark its outside measurement on the ground and then excavate this space twelve inches deep on the west side and six inches deep on the east side, so that when the frame is put in it will have the desired slope. It is then prepared with stable manure in the usual way.

The hotbed last year gave us all the cabbage, cauliflower and tomato plants we needed, and we gave plenty away to our neighbors. Besides this, it gave us early lettuce and radishes in the spring and the same late into the winter.

Do not think this garden has been all smooth sailing and encouragement, for it has had its usual backsets and dark days. Insects have been our "bugbear;" they have attacked us by daylight and by dark, while we were asleep and they awake and at work, and have been fought by every device known to bug warfare—in front, on the flank and in the rear, and it has been only by the most strenuous and constant fighting with them that we have at times saved such vegetables as simlins, cucumbers, cabbage and other plants subject to the bug attacks, which practically includes the entire list, but especially the vine or running plants. This is a puzzling feature of gardening to beginners, but our experience is that it "stumps" the oldest of them.

No information, as is sought to be imparted in this article, is replete unless an approximate cost data accompanies it. It at least makes it more intelligible and useful.

The seed for this garden, including the three bushels of Irish potatoes, cost $10.60, while the labor was done by members of the family in the early morning and late evening hours. But to bring it to a money cost, we believe that the time of one good man a half day each week, at $1.50 per day, would cover it fully, or about $15 in money, making a total cost of $25.60.

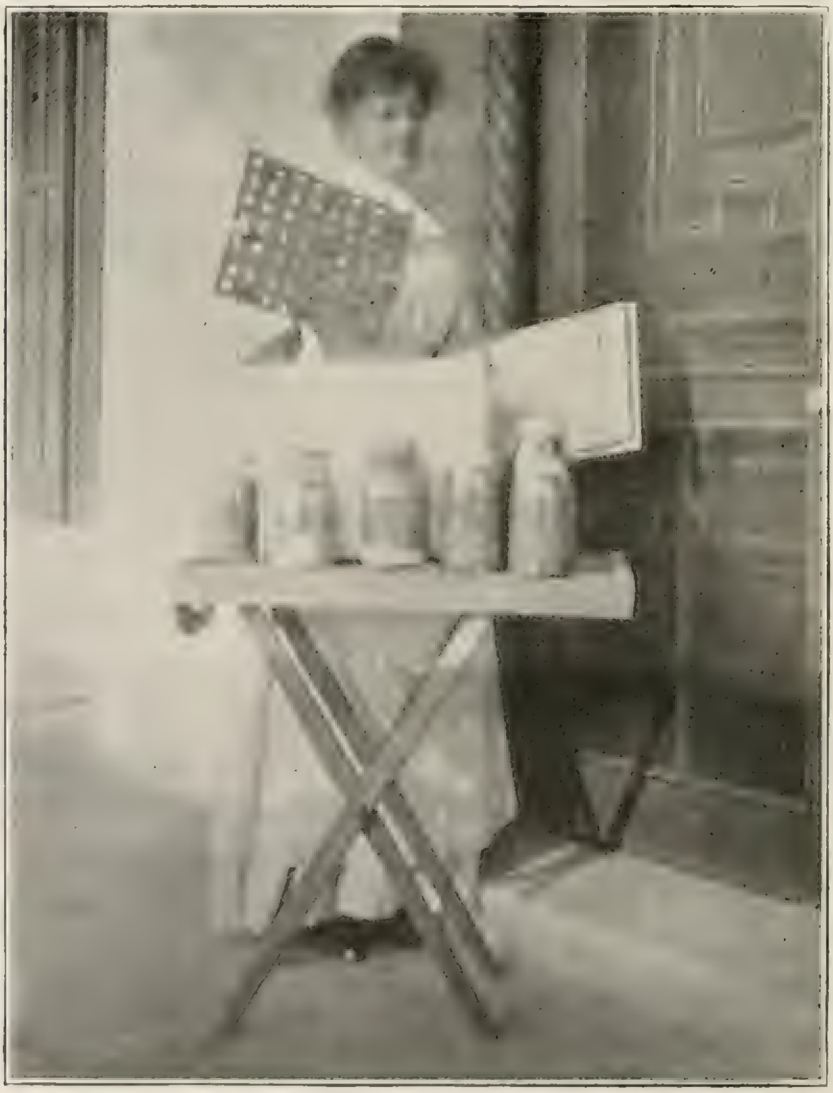
Now what is the credit side against this expenditure for $25.60? An abundant supply of fresh vegetables all summer for a family of eight; a winter's supply of potatoes and root vegetables in the cellar, and on our pantry shelves a winter's supply of the following canned vegetables: Asparagus, spinach, lambs-quarter, peas, beans, corn (cut and on the ear), okra, tomatoes, pieplant, eggplant, cauliflower, beets, Swiss chard, simlins, and okra and tomatoes for soup.

The supply of root and canned vegetables, the result of this garden, could hardly be bought at retail for less than seventy-five dollars.

GENERAL DIRECTIONS FOR STEAM-CANNED VEGETABLES.

Spinach, Swiss chard, lambs-quarter, are cooked down until tender in salt water in open kettle in order to get more bulk into cans. Then put into the jars until nearly full and pour on enough plain hot water to fill the jars full; to this add a scant teaspoonful of salt; put on the lid and screw down loosely without rubber (to allow steam to escape); put into steamer, which should be kept about two-thirds full of water, and boil one hour for each of two days. On the second day of boiling, about fifteen minutes before time is up, unscrew tops, put on rubbers and screw down tight and place back in steamer for fifteen minutes so as to seal rubbers. See also that the jars are full of water at the last cooking.

The eggplant must be cut into slices and parboiled in salt water until tender; then place in jars and follows directions given for spinach.



The home-made steam canner.

Peas, beans and all vegetables must be young, tender and freshly gathered. Put into the jars cold; cover to overflowing with cold water and put a full teaspoonful of salt to the quart; screw on the lid lightly, without rubbers; place in the steamer with enough lukewarm water to come up two-thirds on the jars (always keep adding boiling water to keep it just this high on the jar); steam for three days, one hour each day; then follow directions for spinach, etc., only do not put on rubbers until the third day—this holds good for all vegetables.

This may seem a great deal of trouble, but will prove very simple when once tried. You simply lift the steamer from the stove, leaving the jars in it until the next day, when you put back on stove and proceed as directed. If you have more vegetables than the steamer will accommodate at one cooking, the jars can be removed and a cloth thrown over them to prevent a draft of air from striking the jars and breaking them.

Be careful that the jars do not touch each other in the steamer, as they will crack if they do.

BRINE CORN.

(Mrs. Marshall Gordon, Columbia.)

Select fresh, tender corn, sugar corn preferred, shuck and silk carefully, drop into boiling water and let stand ten or fifteen minutes, or just long enough to set the milk; remove from the water and cut from the cob; when cool pack into stone jars, putting a layer of corn, then a layer of salt; continue until jar is full, having the top layer salt.

Put a weight on the corn and let it stand twenty-four or forty-eight hours, when the jar may be refilled and put away for winter use; one pint of salt is sufficient for three or four gallons of corn. Corn packed this way never fails to keep and is superior to the usual brine corn.

When wanted for use take quantity of corn wanted, cover with boiling water and let stand fifteen minutes when water should be drained off and more boiling water added. Repeat this several times, allow the corn to simmer a few minutes, then dress with cream, butter and a little sugar.

FRUIT AND FLOWERS FOR PROFIT.

(Mrs. Moore, St. Louis.)

Those who have the handling of fruit in a large way no doubt have given long and patient study to the matter, but it can do no harm to emphasize the point that in fruit, as in other things, there is always a place and a market for goods of superior quality. So first see to it that your fruit is the very best that can be produced in your locality. If, by any chance, your fruit is not as good or a little better than that of your neighbors, it might be a real advantage to confine your efforts to the improvement of quality until you have conquered it.

I am of the opinion that women can grow fruit of a little higher quality than men can, if they will put the same painstaking care upon it that they do upon a piece of hand embroidery.

In putting your fruit, of whatever variety, upon the market begin by establishing a reputation for excellence. Never send out a package that you would not be proud to own in the best society. Last fall (1912) I paid fifteen cents per dozen for No. 1 (not fancy) apples in St. Louis, and at the same time could have bought a whole barrel of the general run that was upon the market for $1.35 to $1.50 per barrel, and yet I saw whole orchards of apples unpicked not fifty miles from St. Joseph when I passed that way the latter part of November. The ground, in some instances, was literally covered with fine fruit that the hogs would not eat, because there were so many apples—or so few hogs—and I had been unable to buy them in larger quantities than by the dozen. Later in the same month, in Texas, apples and oranges were selling at the same price per dozen, with oranges in the lead on account of the greater bulk.

A good object lesson for any woman who expects to market fruit is to visit any large city grocery and see the great amount of common, poor and cull fruit that is offered for sale. It is worse than useless to place this poor fruit upon the market, especially when a profitable trade can be built up by working the inferior grades into other forms of desirable products. It is, perhaps, these other ways that will appeal to the largest number of women. There is scarcely a housewife who does not excel in some one or more lines of preserving fruit in various forms, such as jellies, marmalade, jams or other conserves—toothsome dainties that might be turned into real coin—if she would specialize and give some time to the building up of a permanent trade. In Illinois there is a woman, for instance, who is famed for her sun-cured strawberry preserves—which is good for the lady and for Illinois. Her fame has already crossed the river and Missourians buy all of her product that they can get. Yet Missouri has the berries, the sun, and, I warrant, the woman, who might just as well be selling her own product to the best people of a great city as the Illinois lady.

Every grocery in St. Louis has its shelves well filled with jams, preserves and other fruit products, yet people who know and value quality (and their name is legion) go the length of the city to a little shop to carry home a bottle of pickles or a glass of other home-made goods. In one woman's home I saw one hundred tiny gold-banded wineglasses, filled with marmalade, and wondered at the unusual receptacle. The lady explained that these were just samples, and said that she had found that the sample in the gold-banded glass was almost always chosen in preference to that in the plain glass. I speak of this to show that one needs to be observant, and that seemingly insignificant points may be important. The lady referred to took orders before the season on established goods, but these samples were to introduce a new product and were carefully placed before an appreciative public. The woman who can go to her fruit closet and choose from a plenteous store can hardly realize how difficult it is to find this sort of goods of superior quality on the general market, if it can be found at all. Again, I would call attention to the necessity of superiority in whatever product is to be placed before the public if real success is desired, for there is plenty and to spare of common stuff on the market. After trying one after another of the fruit products to be purchased from your grocer, going through the whole list of store preserves, jams and the like, you will long for some real prime, old-fashioned dried apple sauce, like mother used to cook on the back of the stove, letting the fruit cook all day long.

Whoever would establish a reputation, and thereby a market, for any product of superior quality, should be willing to go slowly at first, beginning as near home as possible and gradually extending the circle of her activities. One of the fatal mistakes too often made is to let any product go upon the market that is not fully up to the high standard upon which success is to be built.

In growing flowers for profit very much depends upon location as to whether it is best to specialize in cut flowers, plants or bulbs. If living on a good road that tempts the automobilist to frequent trips, almost any kind of flowers that yield an abundance of bloom suitable for bouquets can usually be handled with profit, providing you have the best of each kind chosen, give generous measure, and advertise properly. Beginning with hyacinths, tulips, jonquils and the early blooming shrubs, the true flower lover may revel in the growing of the best, the earliest and the most attractive baskets of bouquets of marketable blooms that need but to be offered judiciously to be sought for later.

Early varieties of sweet peas are often good sellers. It is best to confine ones self to a few distinct colors, and specialize on those as to earliness, size and long stems. Small baskets of pansies, with their stems buried in wet sand or moss, invariably find friends, as do many other sorts of flowers suitable for cutting.

Gladioli are steady profit-producers in the hands of some. The cut flowers may be sold to the city florist and the bulbs to the seed and bulb man, but here, too, one must become a specialist, choose a few named varieties, then study their needs and conform to them. Peonies and dahlias, and even the universally grown nasturtium, can be made to yield a fair profit, with measure full and running over of pleasure. In every neighborhood there is room for one or two growers of common bedding plants, like pansies, verbenas, petunias, asters, salvias and other like favorites. With a pit one can sprout cannas and dahlias, which are likely to prove good sellers.

None of these things should be taken up without due thought and a proper working knowledge of the requirements necessary to produce flowers or plants of real merit; it all means work, and a good deal of it, and sometimes failure, but patience, knowledge and determination will finally win.

The main factor of success is to have your flowers just a little earlier, a little larger and a little more perfect than the average, and to put them before prospective customers attractively.

INDIAN RUNNER DUCKS.

(Mrs. Scott Cunningham, Palmyra, Mo.)

So much has been written about Indian Runner Ducks, their splendid laying qualities and so on—some of them more or less exaggerated—that the subject seems well-nigh exhausted. However, I feel quite assured that what information I have to contribute will not go down into history as having revolutionized the poultry industry of the twentieth century, so I will write just as briefly and truthfully as possible my own experience with them.

The Indian Runner Duck craze, like that of the Belgian hare, seems to have become quite a fad the past few years, but will prove to be more lasting, as the raising of them is more practical.

I "caught the fever" some years ago while visiting in another state, and immediately upon my return we purchased a trio of light fawn and white Indian Runners of the very best stock.

Having had no experience whatsoever in raising any kind of a duck, I eagerly devoured every poultry magazine article upon the subject and also invested in a book upon the care and feeding of these birds. While I gained quite a little information from reading, I soon found that they required very little attention after all and were almost self-supporting. They do not roost in trees, nor do they have lice or mites, and a three-foot fence will confine them. The eggs have to be set four weeks, preferably under chicken hens, as the incubator seems too dry and hot for them, and because the duck hens do not take the time to set. Until the ducklings are about ten days old they require only a little feed of bread, squeezed dry out of water and mixed with sand or fine grit, four times daily, after which time corn meal, bran and meat meal may be gradually added. Later on cracked corn may be substituted for corn meal. They can now be fed three times a day, and when they are full grown they will eat a little wet mash in the morning and some cracked corn in the evening. While they are growing they are very greedy and mature rapidly, but when full grown they require very little food. They lay about five o'clock in the morning, but it is well to keep them in until nine o'clock. A low candy bucket will supply them with water, so that a pond is not absolutely necessary.

The Indian Runner duck egg is a little larger than a hen egg, the shell is somewhat harder and is of marble whiteness.

Not having had any experience with the green egg strain I cannot say anything about their flavor or the quality of ducks hatched from them, although I have been informed that they are inferior to the white egg strain.

The white egg has a good flavor and is equally good for cooking and table use. Thereby hangs a tale. I had occasion last spring to send an order of two dozen duck eggs for setting to one of two office men. By mistake in their addresses, I sent the eggs to the wrong man and the directions for setting them to the other man. In the meantime the one who received the eggs, thinking them a gift, I suppose, took them home and, manlike, ate them. He acknowledged them as "fine eating," as of course they should have been at $3.00 per dozen. Suffice to say, the other order was duplicated and the owner made happy. Now, regarding the laying qualities of the Indian Runner ducks, I have known young ducks to lay early in the fall, but it is better to have them begin in January, when they will lay almost every day until August, and from then on they rest and molt. The old ducks will lay more or less irregularly in the fall.

I would not advise any one to try to house Indian Runner ducks with chickens, as their habits are different and they puddle in

A flock of Mrs. Cunningham's ducks.

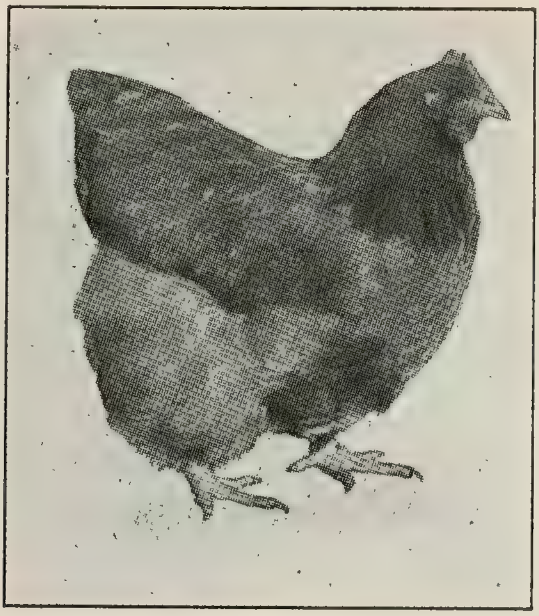
the water vessels, but if kept in a dry shed by themselves and allowed to forage when the weather is favorable, they are a source of satisfaction as well as a pleasure. A little judicious advertising on the part of the breeder of Indian Runner ducks will increase sales and help make the business more profitable.

A PLEASANT AND PROFITABLE HOME INDUSTRY FOR WOMEN.

Mrs. Alford.

(Mrs. R. Lee Alford, Vandalia, Mo.)

Many, if not all, avocations are now open to women, and surely none present a more pleasant or profitable industry than that of poultry culture. This is truly an age of change and progress, and while home making is woman's first and most normal choice of occupation the burden of a livelihood is sometimes added to the duties of the home, and there are not a few women earning a comfortable income from poultry—some from the utility point of view and others from that of the fancier. Whether the poultry is kept for pleasure or profit, or the combination, surely the woman of the farm has the advantage over her less fortunate sisters of the towns and cities; but in most cases she is not using this to best advantage, since those who are making the greatest success in this work are not the women of the farm but those in villages, towns and even our larger cities. This, to my mind, is not as it should be, in that the farm, with its broad green acres, where the growing flock has unlimited range and where the variety of feeds is produced at smallest cost, is the ideal poultry plant. It is here where the hen given the proper surroundings and plenty of feed is more productive and brings in larger returns for the capital and time expended than anything else on the farm.



Lady Show All.

It has been said that the most universally kept farm animal is the hen, and as a producer of food she ranks first. While this is true, it is most frequent that she is the least of all appreciated. Given half a chance she more than does her part, but this is just where the trouble lies. On many farms poultry culture is but a side line and its details are too little looked after to bring about either very much pleasure or profit.

While poultry of some kind is to be found on practically every farm in the country, these flocks, as a rule, are not up to the standard of the remainder of the live stock on the place. The reason for this, in most instances, at least, is because the farmer himself considers poultry more or less of a nuisance and only tolerated for the purpose of supplying his table needs.

The educated farmer is no longer a curiosity, and along with his education has come progress in every line of farm industry to a greater extent than that of poultry culture. On most of the farms of the progressive Missouri farmer are to be found large cattle and mule barns and the most approved shelter for pure bred and often registered swine, yet on some of these places you find little attention given to the needs of the poultry. I do not, however, feel that the farmer himself is altogether responsible for this state of affairs, and though the conditions are not as many farmers' wives would have them they do not in every way do their part. For example, there are but few really progressive farmers, or any other business men for that matter, that cannot tell their exact expenditure and profit for the year; yet there are few farmers' wives who could even give the amount received from the sale of the poultry products, to say nothing of the cost of feed, etc. Keep account of this for awhile, and once you convince the other side of the house there is a profit, and a good one, he will in all probability want to take charge himself. Do not allow him to do this, for I feel that the women are best adapted to this line of work; but once he is thoroughly convinced you will have no more trouble in getting the necessary equipment for conducting this important part of the farm industry, and it will then prove more pleasant and profitable to all concerned.

The poultry industry in the United States is a billion-dollar industry, and Missouri leads all states in this—her income in 1911 amounting to $50,818,145, a greater revenue than is received from wheat, oats, hay or any other farm crop with the exception of corn, an income greater than that received from the sale of dairy products, hogs or sheep. Think of the magnitude of this, and yet the average farmer is hard to convince that his particular flock contributes very much, if any, and it is true that few do even half as much as they might.

Missouri is the only State having a separate poultry experiment station. It is situated at Mountain Grove, Mo., and under the efficient management of its director, T. E. Quisenberry, is doing much toward creating interest in better poultry culture. Likewise the poultry department of our own State University, our state poultry journals and farm papers, and even the poultry fancier, breeder and professional exhibitor of pure-bred poultry, have played no small part in the matter.

No one is justified in raising mongrel poultry in this day and age, no more than he is justified in raising any other kind of scrub stock on the farm. While there are but few really mongrel flocks in the country today, there is still room for improvement among the flocks of standard-bred poultry, and it is largely through selection that this improvement can be brought about. The trap nest plays an important part in the profitable side of poultry culture, whether on the city lot or on the farm, and once accustomed to looking after the nests it is not such an unpleasant task, nor does it require so much time as is generally supposed. If at no other time, by all means mate a few pens of your choicest birds and trapnest them during the breeding season.

Breed for eggs rather than feed for them, but breed and feed both for size. Selection, not indiscriminate mating, has given us the heavy milker and the two-hundred-egg hen. In the human family the offspring of diseased parents are seldom robust, and they inherit a tendency to disease if not the disease itself. What is true of the human race is largely true of all animal life, and especially is this true of poultry. Therefore let me urge you to look well to the parent stock. You will recall the old Spartan law that put to death weakly and deformed children, and while this was a most barbarous practice their intention was the very best, as it was for the purpose of establishing a race of physically and mentally sound people. This law, however, could not and should not be strictly applied in poultry culture.

It is our privilege to select the parents of our feathered family. Do not use an undersized female in your breeding pen simply because she happens to be perfect in color. Better use a male a little short in weight than a female, but, better still, make up you entire mating of birds up to or over standard weight. The country is not flooded or overstocked with birds of this description, but this is what selection does, and when a flock of this kind is once learned of, that particular breeder is indeed fortunate and has no trouble in disposing of all surplus stock and eggs at most satisfactory prices. Here again we find pleasure and profit combined. To the person really interested in raising good birds it is a great pleasure to mate his pens, especially his best one, set the eggs, watch the chicks hatch and grow to maturity. But best of all, to the true fancier, is to see the prize winners develop, and a little later he walks down the aisle of some good show and sees the coveted blue ribbons flaunting from their coops. Perhaps some of you will have this experience here this week, and if you do you will, I am sure, feel fully recompensed for all time and labor expended in bringing your birds to this perfection. If there be those among you who have worked just as hard and felt you had just as good birds yet do not receive a place, do not be discouraged. It is often true there are none but good birds in your particular class, and if the class is large they cannot all win a place, though there may be very little difference in the quality of the winners and those which do not win. Go home more determined than ever to win next year and chances are that you will win more than the other fellow next time, because he may feel that his birds are as good as they can be and you will be striving to make yours just a little better. Those of you who have not tried this side of the poultry business do not know how much real pleasure you are missing and you who have pure-bred birds and have never had sufficient enthusiasm to show them, try it once, and who knows but you may discover that you have just as good or perhaps better birds than many who have been showing for many years. Then, too, you will find there is still more profit, for once you make a good winning and with a little judicious advertising telling the people what you have for sale, you will have little trouble in disposing of same. Right here let me urge you to advertise through our own Missouri mediums, as you will find none better.

Personally, I find real pleasure and profit in keeping standard-bred poultry, and while I started in the poultry business with only its pleasure in view the profitable side is now the most pleasant part.

FARM HOME MANAGEMENT.

(O. R. Johnson, Assistant Professor of Farm Management, University of Missouri.)

In our study of the management of the farm we have continually been brought face to face with the fact that no insignificant factor in the success or failure of this management is the farm home. We know, too, that in the last analysis the center of the farm is the farm home and that around it is woven a web of farm operations, the purpose of which is to bring into the home sufficient means to give a desirable family life and living. Our efforts necessarily turn to the careful study of the farm home in an effort to better its efficiency by increasing the profits of the farm and by establishing a better and more desirable farm life. Because a desirable farm home life is so dependent upon successful farming, it seems logical to discuss first the study of the relation of the home to the business of farming.

In undertaking this study the thing we first considered was the family living which is supplied by the farm to the farm home. The importance of this factor on the farm varies in no little degree with the demands of different people. One farmer will use in produce from the farm from $600 to $800 worth of material in the home in a year, and another one, whose standard of living is not so high, will use one-fourth of that amount. We have been studying the farm all the time from the standpoint of profits and have given very little credit to this factor of farm living, which is so variable that, in order to be fair to the farm, the family living is the first point which we have taken up in this practical study. In order to determine what this family living is and how important it is in the farm home we must necessarily have some means of recording the products from the farm that are used in the home. The products usually taken from the farm are in the form of orchard and garden products, milk, butter, eggs, meats and fuel. The value of some of these is comparatively easy to estimate, but others, especially garden products, are very difficult to account for. We must have a very brief system of accounting for these products in order that it may be practically applied. The housewife will use a few products from the garden very nearly every day during the summer, and it can be readily seen that in addition to the difficulty of deciding the value of these products used each day, it is almost an impractical task to record the amount of each. In the beginning of this work an attempt was made to find out the different classes of these products, but that we have abandoned as being entirely too detailed. The object now is to determine as nearly as possible the gross value of these products used each day or week, as may be most convenient.

When we have determined the value of the products used in the farm home from the farm we must, in order to be fair to the farm, determine also the expense that the farm is put to each year in behalf of the farm home. These expenses are usually in the form of clothing and groceries with some furniture and other supplies purchased. The keeping of the record of this is not so difficult unless we attempt to get it in too great detail. This was the fault with the work at first and this has also been corrected. The information which seems to be of most importance now in regard to the expense of the farm home is about as follows: First, the cash spent for groceries, meat, clothing, household supplies, such as brooms, rugs, furniture, lamps, etc.; and second, the money spent for personal matters, such as Sunday school and church contributions, contributions to charity organizations, clubs, etc. If such things are kept in this brief form it is not very difficult to handle them. Of course in this case the classification of everything is left pretty much to the judgment of the housewife, and this seems to be a reasonable arrangement. These matters as discussed have to do very largely with the economic side of the farm home life.

Because the social feature has been so much neglected in the past, and because so much effort must be put forward in establishing a better social condition in the country home, we have also given some time to the study of this feature. This would come under the second expense account, which I have above mentioned. It is very true that the farmer's wife has a long day and one of hard work before her almost every day of her life, as conditions have been and as some conditions will probably continue to be for some time. This is partly her fault, and more largely the fault of the conditions under which she lives. She has given very little thought to conveniences in arranging her home to make work easier, or, if she has given thought to it, the profits of the farm have not been of enough importance to allow the working out of her ideas as to the improvement of the farm home in the matter of conveniences. She can see that a water system in the home would save her a great deal of work; she can see that a lighting system would take a great deal of her burden away, yet the profits of the farm have been so small that such things are out of the question in some cases. In other cases she has actually been able to have these things from the farm profits, but has been prevented from doing this because of the attraction of the additional profits to be made by reinvesting the first gain.

We have established a system of labor records for the farm home in an effort to show the farmer's wife how much time she actually puts in on her work and also how much of this time might be saved by rearranging her home. In addition to this, the labor records will show how much time she puts in at different kinds of work in the home. The kind of work which she does is of no small importance. The woman in the city home usually puts in a full day, but a considerable part of this day is usually spent in social duties, recreation, etc., while the farmer's wife puts in her time at some work which is far from being recreation. There ought to be some kind of a definite relation between the kind of work a housewife does and the efficiency of the farm in supplying the family living. Perhaps she is spending more time on some things that are of less importance and neglecting some of the more important things.

This we must determine. This finishes, I believe, the purpose or object of the farm home management work.

As to the methods which we follow in carrying on this work, it is briefly as follows: We get the farmer's wife to co-operate with us in keeping these records. We supply her with the necessary blanks, issue directions as to how to proceed, and work up the records for her. We are thus able to compare the results obtained in different farm homes. We have as our help in this work several of the farmers' wives in our State. They have been helping us in this work for some time, and through their suggestions we are getting a great many things of value which will help us in making this work easier and more efficient. The work was begun in 1911 by Miss Bailey, who was then an assistant in this department. It was started on a small scale, only three farm homes co-operating with us at that time. In an effort to make this work more valuable, we have at the same time been keeping some records of the conditions in city homes. These two sides of the work will, it seems, give us a good comparison of the different conditions, and will doubtless give some very valuable information with regard to the importance of the conveniences which the city wife has. The work is being carried on again this year and we expect to continue it for some time. We are not yet in position to give any results of this work, as our information is somewhat too limited at the present time; but with the co-operation of the farmer's wife in an effort to better these conditions, both from an economical and from a social standpoint, we believe that much value can be derived from this line of work. If we can be of material aid in making the day for the farmer's wife shorter, in making it contain a little more recreation in addition to the work which falls to her lot, in helping her to get more conveniences in her farm home, in giving her the credit which she deserves for her part in making of the farm profits, we will consider that the work has been worth while and that we are fully repaid for the efforts put forth in this direction.

FARM HOME MANAGEMENT.

(Mrs. J. Ed. Hall, Lamonte, Mo.)

Mrs. Hall.

The subject of "Farm Home Management" should be, and no doubt is, a very prominent one in the mind of every Missouri farmer's wife. We are all aware that in recent years much has been done in this State to secure better plans of management of the farms in order to improve and keep up the fertility of the soil and at the same time keep adding to the farmers' bank account.

Those in charge of this department have seen the need of better management in the home. To my mind, no closer business relationship exists than that between the farm and the home. Truly, is the wife her husband's business partner. She attends to his writing, answers inquiries, sends out orders for seed, takes the piece of machinery to the shop for repairs, and often takes the team to the field and rakes the hay or plows the corn. He, in turn, in some instances at least, helps with the family washing and churning, gathers the fruit, puts down the meat, and takes the produce to market.

The average farm woman knows of the work to be done; of the numerous nameless tasks that take our time and use up our energy; of the monotonous routine of daily life, all of which keeps her from viewing her work as a whole and from working out plans for the easier and more systematic performance of her household duties. Farm home management does these things for her.

The one in charge of this department, upon request, will visit the home. Personally, I received much benefit from Miss Bailey, who formerly had charge of this work in Missouri, but who is now with the United States Department at Washington. Many helpful suggestions as to the arrangement of house, grounds, poultry yards and buildings were given; also hints on preparation of meals, balanced ration and the making into healthful and appetizing dishes left-overs from other meals; hints on laundry work, and little devices to save time and labor, thus leaving more time for rest and recreation.

Farm home accounts constitute another very important factor in farm home management. By means of blanks furnished records can easily be kept showing cost of labor as well as financial cost of products raised on the farm. These show us what is profitable and what unprofitable. Thus we are helped to know how to manage better in the future.

The labor record shows the amount of time spent on different kinds of work in the home. This helps us to better plan and arrange our work and also often shows how some little added convenience may save time and labor.

The financial report shows the cost of clothing, fuel, food, light, and improvement for the house.

Some may say, "How could I do all those things? I have more than I can do already." My experience has been that keeping these records leads us to use more system in our work and soon we find ourselves with more time than we thought.

Then it is quite satisfying to know just how much time we spend doing each kind of work, how much we sell from the garden, orchard and poultry, and how much is consumed by the household, the cost of everything used for food and clothing.

In conclusion, it seems to me that it is of as much importance that the farmer's wife keep a record of household receipts and expenditures as it is that the farmer keep such records of his farm operations, and surely it is just as essential that the farmer keep tab on his finances as it is for the merchant or manufacturer.

PARCEL POST.

(Mrs. Cora Chapin, Appleton City, Mo.)

Mrs. Chapin.

No one can tell in advance how the parcel post will work out. Some say it will be a failure. It may be, though, that the objections are inspired by the express companies that must, perhaps, suffer loss of revenue from any mail system made to work successfully for shippers of small packages. To be sure, if the public could be induced to refrain from using the parcel post it would become a failure from lack of patronage. The public is not going to be fooled. It is tired of the express monopoly.

Some packages sent by parcel post and others by express from the same town, to the same destination and at the same time, serve to show the advantages of parcel post. In the majority of cases the parcel post packages were delivered first, and in every instance it was cheaper. So you see if one wishes cheap and rapid transit, the parcel post seems to be ahead in this experiment. Mrs. Julian Heath of the Housewives' League of New York City is arranging to have farm products sent direct to the consumers. They will have a producers' and consumers' registry. In Germany, I am told, there are no express companies. Freight and mail carry all the packages. Some are claiming that husbands in the city can "shop early to catch the mail"—that is, buy at the market before they go to their offices or place of business and have purchases sent by the afternoon delivery to their homes in time for a seven-o'clock dinner.

I see where one man sent a thousand brick by mail as samples for the purpose of advertising. We home makers here assembled, who take special interest in eggs and dairy products, may very properly talk about that phase of the subject. I see that the St. Louis Republic sent eggs into three different zones successfully. I tried an experiment and sent eggs to the first and second zones from Appleton City, that is, to Nevada and Kansas City, respectively. The eggs were wrapped in paper and placed in pasteboard boxes having egg case fillers in the boxes. The boxes were then wrapped in heavy paper. The sixteen eggs sent to Nevada cost eleven cents by parcel post. On arrival there were eleven perfect eggs, three slightly cracked and two badly cracked. The eighteen sent to Kansas City cost fourteen cents. On their arrival there were eleven perfect eggs, five badly cracked and two that were a total loss, the contents having all run out. One end of this box had been mashed in. They were certainly very roughly handled, but none of the contents of the broken eggs leaked from the package. So, of course, I did not receive any letter from the postal authorities finding fault with my method of packing. As yet I have seen no advertisement of egg containers for parcel post, but I am sure they can be made cheaply and successfully. It may, however, require considerable experimenting before an ideal package is perfected. We could use these containers and then, after a customer gets several, have them returned. I see where one man sent twelve eggs to Washington in a container and only one was cracked.

The rural carriers take eggs to town in baskets, pails or the same way that we market them. I should think the large cities and towns could make use of this method.

My friend in Kansas City said they could secure nothing but cold storage eggs, and they were six cents a dozen higher there than in Appleton City. When eggs are sent in large quantities they will go cheaper by express than by parcel post, at the present rates.

Butter can be taken by the rural carrier in pails or baskets. Beyond the local zone butter must be packed in metal, glass or wood and surrounded by a box and wrapped securely. Nothing must escape; and as offensive odors are not allowed to go through the mails I fear some butter I have seen would be ruled out. To be sure, none of our Home Makers' Conference members make butter like that. So many of the farmers nowadays have cream separators and sell their cream that most of the butter can be sold in the local zones, and that requires no extra packing. The parcel post in its present form, and in the improved form that will follow the early experiments, is supposed to bring important changes in the interest of the producer and consumer and is designed for the convenience and welfare of the public. The public surely will realize this and it will not throw itself back into the grasp of the express companies. The parcel post shows increased business every day. So we predict it will be a success, and that rates will soon be cheaper than now. I would urge all the home makers to use the parcel post whenever they can.

THE BEST BREED OF COWS FOR THE FARM—THE HOLSTEIN.

(Mrs. Marshall Gordon, Columbia.)

A few years ago the Jersey was considered the only cow for family use, but the Holstein is rapidly growing in popularity as her superior qualities become better known.

In the first place, she is a stronger, more vigorous cow than the Jersey, not nervous and high strung; more quiet in disposition, and therefore a healthier animal and freer from tendencies to disease than the Jersey.

Physicians almost invariably recommend the Holstein milk for babies because it is not so rich in butter fat, and for that reason is easily digested. Especially do they recommend it for delicate babies because of its superior digestibility, and because it contains the necessary elements for making muscle. This is very essential for the welfare of the child.

When the cream is taken from the Holstein milk it is still rich in food value, notwithstanding the butter fat is removed. The Holstein calf is on this account more easily raised than the Jersey; the milk being more digestible and containing more nourishment, the calf thrives on it. The veal calves develop more rapidly, are larger, and for that reason are more profitable to the owner.

The Holstein milk is therefore very valuable as a beverage, as a food for infants and also for calves, pigs and fowls as well. So that any surplus from the table need not be wasted, but may be very profitably used.

The Holstein gives a larger quantity of milk, consequently she will produce as much or more butter than the Jersey. The world's record as a butter maker for the week, the month and the year was held by Colantha's 4th Johanna, a Holstein.

And when this peerless cow has served her purpose as a milk producer she may be fattened and sold for beef, and because she is larger and will weigh more than the Jersey she brings a better price from the butcher. So from the commercial standpoint the Holstein is the more profitable cow for the farmer.

We have considered the Holstein from the standpoint of her own constitution, the value of her milk as a healthful food and the value of the milk from the standpoint of quantity.

We have found, too, that the flesh of this good and gentle beast has a decided value commercially, so we can recommend "her excellency" as a friend to man and a sincere, all-round, general utility cow.

Having used the word sincere, we pass easily to the word true. Having already found her good, it only remains to prove her beautiful in order to classify the Holstein among "the true, the beautiful and the good."

SALT-RISING BREAD.

(Miss Winona Woodward, Department of Home Economics, University of Missouri).

The making of salt-rising bread has long been a problem to the housekeeper who is fond of such bread or whose family is. It is a quite generally acknowledged fact that salt-rising bread is hard to make. The experienced bread makers have learned the art after many failures and only because of their great perseverance.

Salt-rising bread is a kind of leavened bread which is made light not by the introduction of yeast as with yeast cakes, or by mechanical aeration, or by carbon dioxide liberated from chemical compounds, such as baking powders, but by some ferment which is present in the ingredients used in starting the bread. The most marked characteristics of it are its texture, odor and flavor. The texture is very close and fine yet the bread is light. The odor and flavor are especially characteristic, being rather penetrating. This odor which suggests putrefaction is unpleasant to some people. The flavor is slightly sweet, but peculiar and characteristic.

The making of this bread has always been regarded as an uncertain process at best. The most proficient salt-rising bread makers, while they protest that they never fail in making it, will usually, upon questioning, confess to an occasional failure and advise inexperienced persons not to attempt it. One will say it cannot be made in the winter time; another will not attempt it without a particular kind of corn meal or flour; a third insists upon perfectly fresh milk, obtaining it directly from the cow even when the bread-making is to be started at noon. At the time a starter is prepared for the bread one cannot tell definitely whether it will ferment or not. A strong fermentation should result in twelve hours, but this is not a certain indication that the bread will rise when made into loaves.

The housekeepers of the sections of the country where salt-rising bread is used have each their particular and individual methods of procedure. No two would be willing to exchange their methods, because the points wherein they differ are held to be vital points. It is probably because of frequent failures that each housewife adheres so closely to her own methods which she has found to be successful.

On examining numerous recipes for salt-rising bread it was found that the bread is started with a variety of ingredients. Graham flour or corn meal is always used and salt and sugar are often present. These are sometimes combined with water and sometimes with milk. From this it would seem that there is no one ingredient responsible for the lightness. The ferment concerned therewith is connected with the Graham flour or with the corn meal.

The usual method of procedure in making salt-rising bread is to scald some milk, (as the housekeeper would say,) that is, to heat the milk almost to the boiling point, then pour it over some corn meal, sugar, and salt. For a cup of milk four tablespoons of meal are used, two teaspoons of sugar and one teaspoon of salt. This is allowed to remain in a warm place over night or from twelve to sixteen hours, when it should be fermented and light. To this mixture is then added water, sugar and flour sufficient to make a batter, and it is again allowed to rise. When this batter has doubled its original bulk, enough flour is added to make a dough which can be kneaded. It is made into loaves and allowed to rise before baking.

Not even the most experienced bread maker can always know that her mixture of corn meal and milk which she prepares at the beginning of her bread making process will ferment, and even if fermented, that it will make good bread. We frequently hear of the bread not rising when made into loaves. And the worst of it is that no reason can be assigned for this lack of lightness.

We have almost overcome these difficulties in yeast bread because we have a fairly definite yeast on the market which anyone can purchase, and because we are fairly familiar with yeast and its actions. We know that we must not scald the yeast when starting the bread, that it must be kept warm but not hot while rising, and that the use of a little sugar facilitates the bread making.

But salt-rising bread making has never until recently been studied scientifically with a view to making it a sure method. We are inclined to think there is something weird about the process used—something which "just works" in some cases and in some cases doesn't. Perhaps that is the way people, hundreds of years ago, thought of yeast bread, before the subject had been studied and the definite little yeast plants and their characteristics had become familiar subjects, and before the everywhere-familiar "Yeast Foam" was put on the market.

We know definitely now that certain specific organisms are responsible for the lightness, flavor and odor of salt-rising bread. These organisms are not yeasts as one might suppose, but are bacteria. One type will produce the lightness, another the odor and flavor. But as yet we have found no single organism which will give both the lightness and flavor to the bread. So the task of preparing a simple marketable product from the salt-rising bread organisms is not a very easy one. The questions arise, have we found the best thing to give the lightness or the odor and flavor to the bread? Can these organisms be kept in a dried form, and for how long? What direction for their use shall we give? How long shall we allow the sponge to rise? How warm shall we keep the sponge and dough while rising? These and other questions confront the student of salt-rising bread.

Some of these questions are partially answered. We know that the salt-rising organisms can be kept for several months in a dried form, and seem as vigorous after being kept in the dried form nine months as when fresh. We know, too, that the sponge and dough while rising should be kept warmer than that for yeast bread—three degrees above body temperature, or about 40 degrees Centigrade or 104 degrees Fahrenheit, being considered good. We know that the salt-rising organisms are very sensitive to change of temperature, hence the reason for keeping the dough warm while kneading, usually warming the flour to avoid cooling the bread.

But as to the other questions, they are as yet unanswered and until they can be definitely answered we need not expect salt-rising bread making to be made a certain process.

ORGANIZATION OF HOME MAKERS' CLUBS UNDER THE AUSPICES OF THE STATE BOARD OF AGRICULTURE.

(Nelle Nesbitt, Institute Lecturer, State Board of Agriculture, Columbia, Mo.)

Miss Nesbitt.

One of the ways the State Board of Agriculture of Missouri has chosen by which to serve the citizens of the State is through the organization of local home makers' clubs and farmers' clubs in as many communities as possible. Farmers' institutes have been held under the auspices of this Board since 1882, "for the promotion of the objects for which the Board was instituted, and for the advancement of the agricultural interests of the State." These institutes have been held throughout the State in those communities where the farmers recognize the advantages of such organizations and ask for them. The State Board of Agriculture has a staff of regular institute lecturers who are sent out at the expense of the Board. These men judge corn and stock, etc., and give lectures on such phases of farming as they may be asked to give. In case no man on the staff can talk on the subject asked for specially, it is almost always possible to secure a man from the faculty of the College of Agriculture for this. These lecturers are, as I have said, sent out at no expense to the farmers, nothing further being required of the local people than that they furnish the meeting place and the audience. It is recognized that the improved methods of farming and stock breeding brought about by such gatherings, lectures and free discussion of farming problems by people vitally interested, lead to a greater productivity of the farms which makes it merely a good business venture. The State gains in wealth more than it pays out in salaries and expenses of lecturers.

It is probably because the financial advantage of farmers' institutes is so obvious and the results so quickly gained that the corn and pigs and cattle have received this attention of the State for so long a time before as much was given to the consideration of the farm homes and that best of all crops, the boys and girls, in this "advancement of the agricultural interests of the State." For four years, however, or since 1909, the Board has sent to those institutes from which the demand came, a woman trained in Home Economics to talk to the farmers' wives and daughters along various lines of Domestic Science.

We realize that the old type of farmers' institutes has been a very potent factor in advancing the agricultural interests of the State and that these institutes have caused many farmers to take up scientific methods of farming. It is still the most efficient means of service in many localities. In other communities, however, it seems that the best results are to be obtained by forming definite organizations which will carry on work during the whole year instead of having only one meeting of one, two, or three days out of the three hundred and sixty-five.

This is true for both the men's and women's work. So we find the State Board of Agriculture urging and helping in the organization of local home makers' clubs and the girls' clubs that may be cooking, sewing, poultry or bee raising, tomato growing, bread making, etc.

We see the need of these clubs because we are beginning to realize that the farm home is remaining stationary, or nearly so, and is dropping far behind the advances made on the farm itself. We realize also that special training is needed for developing efficiency in women's work just as in the case of men's work, and that so far the special training of women has in this State been less generously provided for than has that of men. It is through such organizations as the local home makers' clubs that the State Board is endeavoring to give this special training for efficiency to those women of the State who cannot come to the University, to any one of our State Normals, or even to our State Home Makers' Conference which is held each year during Farmers' Week at Columbia.

These home makers' clubs should hold regular monthly or semimonthly meetings and the year's program can be made up from an infinite number of subjects so vital to the home maker, particularly to the home maker in the country. It might include such things as foods and nutrition, well-balanced meals, proper food for infants and growing children, for the adult and for the aged, diet in disease; sanitation, water supply, ventilation, transmission of disease; home decoration, household conveniences, household management; clothing, sewing, dressmaking and millinery; home nursing; poultry raising, butter making, vegetable and fruit raising; canning and preservation of foods; the relation of home and school, the care of children, the boy and the girl on the farm; books and magazines; games, playgrounds, music, etc.

Some one who excels in her particular line should be given the leading part on the program and a free discussion by all present should follow. Or, one meeting might be given over to one topic, such as the canning and preservation of food products, on which both State and government bulletins may be obtained and in which everyone has had experience.

These bulletins might be used as textbooks, examined critically in the light of practical experience, and reported upon at the meeting. The problem of the rural school is a much-discussed one at the present time and several meetings or a part of each meeting could profitably be spent in considering it, and in devising ways and means of co-operating with the teacher and the county superintendent of schools in making the school better serve its function in the community.

The first and greatest objection to these organizations which is met, is that of lack of time and energy on the part of the women. The home makers on the farm with three meals a day to get and dishes to wash as often, children to care for and dress, lunches to put up for the school children, beds to make, poultry to care for, milk and butter to tend, cleaning, sewing and laundry work to do for the household, have their hands rather full. But because of this very fact, their needs are greatest. We need to come together and talk things over. The greatest difficulty with housework is the lack of standardization, and great good can be accomplished by study and by profiting by each other's experience; by learning how we may work to save labor; by learning how easily and at how low cost the various labor saving devices may be installed in the farm houses as well as on the farm. Devices and machinery that will so change the life of the mother that it may not be one of drudgery with no time nor energy for her own enjoyment of life are no longer so expensive as to be prohibitive in the average home.

We hear many bitter speeches nowadays about the farmer caring more for his pigs and calves than for his children. It is true that the feeding and sheltering of stock have received much attention. Also, bovine tuberculosis and hog cholera have had immense sums expended on their study and attempts at elimination, while much less is done by the State and government for the cure and eradication of human tuberculosis. But has not this work all been done in order to provide for the future of these same boys and girls? It is not believable that the farmer loves his stock better than he loves his children. Rather, he has a sublime belief in the child's power to overcome the influence of his environment and come out well in the end. Then, too, the end was not so easily seen. The pigs and calves are looked upon from one standpoint only—the financial standpoint. It is simply a business proposition; so many pigs, so much feed, so long a time, so much money received, so much profit.

But can the care of children and the value of a true home be expressed in terms of dollars and cents? The home must be the expression of the intellectual and spiritual as well as of the physical life of the family group and these cannot be expressed in terms of money any more than we can put a money valuation on good health. We know how much is expended for doctors' bills, how much time is lost, and can estimate the value of the material goods not produced in a time of illness. These we can put in dollars and cents, but do they tell half the story? And who can express the happiness and contentment the spirit of well being and peace with the world in such terms? How shall he express the value to the family of a housemother who is not worked to a state of exhaustion every day and who has time for good books and good music; who has time to spend with her children as they grow up, and enjoy the things they are doing and to co-operate with the teacher from whom they are receiving their education?

The housewife has a difficult problem because it is indefinite, but it is hoped by the home makers' clubs to simplify life not to make it more complex; to get at the essentials and let the unimportant go; to standardize housework as work on the farm has been standardized; to learn by study and by each other's experience how we may work to save labor; to install in our farmhouses as well as on the farms, labor saving devices that will give the housemothers healthier, happier lives with more leisure time for their own enjoyment and development.

The State Board of Agriculture can help the home makers' clubs in many ways—such as by furnishing lecturers for special occasions, judges for contests; by helping in the planning of programs and sending lists of bulletins on various subjects and by their own bulletins. Several clubs may unite and arrange for a "short course" of five or ten days; all the clubs in one county may form a county organization meeting each two months or oftener and all would have representatives at the State meeting—the Missouri Home Makers' Conference held in Columbia, the second week of January of each year.

So far, the Pettis County Home Makers' Conference is the only county organization in the State. The way there had been prepared by Mr. Jordan in organizing the farmers of the county pretty thoroughly. That, with a very much alive set of officers, has put the organization on its feet and it has already a greater membership, larger meetings and more enthusiasm displayed than the farmers' organization of the same county. Local clubs are being organized in communities near Paris, Kirksville and Rockport.

Further information and aid in regard to the organization of these clubs may be obtained by writing to Secretary T. C. Wilson of the State Board of Agriculture, at Columbia, Missouri. Printed copies of model constitutions and by-laws for local home makers' clubs and farmers' clubs may be had also from Mr. Wilson.

Such organizations have become great powers for good in almost all the states around us, and we hope that Missouri women will not be slow in taking advantage of the aid that the State Board of Agriculture is so willing and anxious to give, and that eventually every township, if not every school district in every county of the State, will have its club.

THE PETTIS COUNTY HOME MAKERS' CONFERENCE.

(Mrs. J. B. Mockbee, Sedalia, Mo.)

The Pettis County Home Makers' Conference was organized on the seventeenth of December, 1912, during the short course for women given at Sedalia, by Miss Nelle Nesbitt, Institute Lecturer for the State Board of Agriculture. Though only a few were present we elected the following officers: President, Mrs. Harry Sneed, Sedalia; Vice-President, Mrs. Emmett Bouldin, Hughesville; Secretary, Mrs. J. B. Mockbee, Sedalia; Treasurer, Mrs. F. F. Combs, Sedalia. At this time a meeting was called for the last Saturday in December. The last Saturday in each month was chosen for the regular time of meeting, on account of that being the time already chosen by the Bureau of Agriculture. This makes a convenient time for the women from the country to come in to Sedalia, as they can come in with their husbands. Our membership rose to twenty at this first meeting, which was merely a preliminary one, where we made out the program for the next meeting which was to be held January 26, 1913.

We have now (March 1, 1913) a paid membership of forty-five and have had as many as seventy-three in attendance at a single meeting. Our annual dues are only twenty-five cents, as we have no expense except postage. We meet in the courthouse at the same time the men hold their meeting in the same building. At the last meeting, February 22, several of the men left their meeting to come over to ours, especially to hear Mrs. Staples talk on poultry.

Pettis County Home Makers' Conference.

To stir up interest Mrs. Sneed and I telephoned every woman in the county we could reach by telephone and had each one tell her neighbors whom we could not reach in this way. The majority of our members are country women and we hope eventually to have representatives from every community in the county. We are especially anxious to get in close touch with the rural schools and in this endeavor we are meeting with hearty co-operation from the teachers and from the county superintendent of schools, Mr. T. R. Luckett. Results can be seen already in the schools, and we are aiming to make our Pettis county rural schools the best in the State.

We are also planning to send a goodly delegation to the State conference at Columbia next year and hope by that time to be able to report on much work accomplished.

REPORT FROM "COUNTRY CULTURE CLUB" OF HUDSON, MISSOURI.

(Mrs. Jesse Ellis Holland, Montrose, Mo.)

Mrs. Holland and her little daughter.

I come before you this morning as a member of and a delegate from the Country Culture Club of Hudson, Missouri, to tell you, as best I can, something of what we have striven to accomplish through our organization during the past year.

Our club was organized in June, 1911, with some twenty members, and during the remainder of our initial year our time was devoted almost exclusively to the study of Home Economics. This year, however, desiring to broaden our line of work, we have combined Home Economics and literature and the enjoyment of this line of work has been unanimously voted a success by our club members. We meet at the various homes on the second Wednesday of each month. Our motto is "Happy Homes," and I cannot better tell you our object, than to quote from our Year Book, "To be alive in every part of our being, to realize the possibilities that are in us, to do all that we can, to become all that we are capable of becoming, this is the aim of life." At our annual meeting we decided to publish and use a Year Book, and this we have found quite helpful in our work.

We assisted the Farm and Home Improvement Club, another organization in our community, in giving the home picnic and product show in September, which was largely attended and was pronounced a splendid success. Many premiums were given for bread, cakes, plain and fancy, sewing, corn, fruits and vegetables—in fact, for very many things which boys and girls can produce upon the farm or in the farm home. This picnic is an annual occurrence. At the last one Dean Mumford gave an address.

Being a federated club, we are much interested in the club work of the Fifth district, in which we are located, and five members of our club attended the district meeting at Nevada, in October, and three of our members will be in attendance at this Home Makers' Conference.

Another feature of our work which is proving quite a popular social event is the "husband's reception" which is given during one of the moonlight nights in October to the husbands or sweethearts of all members. This reception is held at one of the most convenient homes and after a few hours spent in varied and amusing entertainments provided by an entertainment committee refreshments, previously prepared, are served by members.

Early in December, a talented impersonator was secured and an entertainment given under the auspices of the Country Culture Club, and we have made arrangements for another similar entertainment to be given next week. Living in the country as we do, it is worth something to us to have a first class entertainment at our door, as it were.

As a club, we sent a small contribution to the General Federation work.

Some of the members made some special effort at Christmas time to make presents for some poor people, and a few who can are helping a little sick girl to get medical aid and other things necessary for her comfort. Once a month we lay aside our home duties for a little while and attend our club meeting. This we do because we enjoy it, then we learn something, and we feel that it promotes sociability and kindly feeling among neighbors. Then we go back to our homes, rested and refreshed, with new ideas and higher aspirations. With deft hands the delayed work is quickly done, and we feel that in many ways our lives are brighter and the work lighter for having attended the club.

We think that the women of every country neighborhood should organize some kind of a club. It helps solve the problem, "back to the farm." Then, too, we women in the country, with but little leisure, like to feel that we are banded together with the noblest and best of Missouri's fair women, and are thereby helping put our grand Old Missouri in the front rank for all things great and good, and that are worth while.

So with this slogan, "More clubs for country women in Grand Old Missouri," I thank you.

ORGANIZATION OF FEDERATED HOME ECONOMICS CLUBS.

(Mrs. Flora Hartley Greene, Columbia, Mo., State Chairman of Home Economics, Missouri Federation of Women's Clubs.)

The Missouri Federation of Women's Clubs, through its home economics committee and other interested people, has thirty clubs in the State that are giving all or a generous part of their time to the study of some phase of home economics. The State University and the State Board of Agriculture have sent lecturers to all clubs that wished a lecture on home economics, when those lectures could be arranged in groups of three or more to suit the convenience of the lecturer. More than two thousand women have been reached in this way. The following lines of study have been suggested as possible sources of inspiration or help:

1. Study some special line of home economics, such as household chemistry, or bacteriology, house decoration, or sanitation, household management.
2. Study of menus that may be served to a definite number of persons for a definite sum.
3. Study of dress from an artistic, ethical, scientific, historical standpoint.
4. Study of contagious diseases in the home and in the community.
5. Study of ways and means of improving the mental and physical training of our children.
6. Study and prevention of infant mortality.
7. Teaching of ethics, morals and religion in the home. Origin of life and sex problems.
8. Amusements of boys and girls between the ages of ten and twenty in the home and community—dancing, cards, chaperonage.
9. The place of music in the home and how to get it there.
10. The demand of a health certificate as a prerequisite of a marriage certificate.
11. Ways and means of saving time and energy in the home.
12. Inspection of groceries, meat markets and milk depots.
13. Introduction of home economics into public schools.
14. Introduction of home economics books and journals into public schools and libraries.
15. Establishing home makers' conferences.

The State University will furnish lecturers from the department of home economics to address the ladies at any meeting which can be arranged for at a time that will suit the convenience of such lecturers. These dates may be arranged through correspondence with the State chairman, or with any of the following district chairmen: Mrs. J. B. Tanner, East Calhoun street, Chillicothe; Mrs. W. Q. Church, 3325 Wyandotte street, Kansas City; Mrs. H. C. McCahan, Kirksville; Mrs. E. A. Thompson, Monroe City; Mrs. Cora Chapin, Appleton City; Mrs. C. E. Lingsweiller, Lebanon; Mrs. Oliver J. Chamberlain, Pierce City; Mrs. Fannie Bonner Price, Edwardsville, Ill.; Mrs. E. W. Cole, Fredericktown, Mo.

Any group of women who find that they are interested in any of these lines of study or any other line of home economics may write to the State chairman, Mrs. Flora Greene, Columbia, Mo., and outlines of study will be sent with suggestions for literature on the subject. It is possible in this way to plan a course of earnest helpful work, or it may be as light as one may ask.

THE CLUBS AND THE LIBRARY COMMISSION.

(Miss Elizabeth Wales, Secretary Missouri Library Commission, Jefferson City, Mo.)

Every mother likes to see her child grow strong and independent. Thus, whenever I speak to women's clubs of any library work, I always feel assured of a sympathetic hearing. When, further, I speak of the work of the Missouri Library Commission for the club women, I feel that I should always acknowledge the indebtedness of that department of the State work to the energy and interest of the women's clubs who mothered the movement which created the commission and by their own initiative sent out traveling libraries before there was any other department to do it.

During the last four years the records show that 138 clubs have sent in requests for assistance and books have been sent out to the number of 6,142 volumes in answer to these requests. One lady will write, "Our club is about to study the heroines of the Bible. We should be very glad indeed if you could send us some books from which we could make out a program." Another will write, "World literature is to be subject of our club study during the coming year. We should be very glad if you could send us any outlines which will assist in making an intelligent program. We would like to know if the Library Commission can loan us the books necessary for making a study of such a subject." Another club woman has a paper to prepare concerning the political forces of the State of Missouri. Where should she write with any better success than to the capitol of the State. A copy of the political platforms and of the blue book published by the State Department gives her all she needs to work out her subject. A letter from a librarian in a small town tells us that their club is studying Greek sculpture and is very anxious to find some kind of an illustration of the Victory of Samothrace. This leads to our offer to loan a collection of thirty photographs of Greek sculpture to the aforesaid club. Their study is much enlivened throughout the year by the presence of these beautiful illustrations of the work of the Greek masters. A teachers' club wants to know if we have any interesting books on child study. A school superintendent asks for some teachers' books that the teachers will enjoy. So from all corners of the State—towns, where there are no libraries and towns where the libraries are small and inadequate—come the requests for help along special lines of work. Such requests come, it is well to remember, from the students and helpers who are working out the salvation of the State.

The equipment of the Missouri Library Commission for answering such calls is constantly growing and developing. We have now upon our shelves 11,300 odd volumes, all of which are at the service of the people of the State. If a time should ever come when not one book remained in the office of the commission and all were scattered throughout the State doing their work among the readers and students, it would be a happy day. As it is, the circulation in the last five years of about 42,582 volumes indicates the immense need of the field. Within the last year, through the earnest co-operation of the public libraries of the State, the State University and other institutions owning large collections of books, an effort has been made to perfect a system of co-operation which will allow these libraries to loan to the Library Commission books which they can spare from their own circulation for the use of those who live in distant points of the State. The reservoir from which we may draw is thus doubled or trebled in capacity.

If you want a book for study or if your club is in need of a special collection of books for its program work, how shall you secure the advantage thus offered by the State of Missouri through the Library Commission to all dwellers within its borders? Let us say that Mrs. Blank's club is interested in the study of the English novelists, the few books which are owned by the members prove inadequate to aid them in the development of the subject. Mrs. Blank as secretary writes a letter to the Missouri Library Commission asking for the loan of books which will help in the study of the English novelists. An early mail brings an answer containing the following list of books which can be supplied by the Missouri Library Commission.

Cross—Development of the English Novel.
Garnett & Gosse—History of English Literature, v. 4.
Moffat—George Meredith.

Pertwee—Scenes from Dickens.

Phelps—Essays on Modern Novelists.

Ward & Others—World's Great Woman Novelists.

With the letter is enclosed an agreement which Mrs. Blank is requested to have signed by her club president and one other officer and by the person who will care for the books when received. One of the books on the list proves to be the same as one which is already owned by a member of the club. Mrs. Blank therefore crosses out Garnett and Gosse, "History of English Literature," and returns the list with the signed agreement to the Missouri Library Commission. Within a few days a small cardboard case is received containing the five books requested. There is a payment of forty cents to be made for express charges, but the books are loaned to the club free of all other expense. These books are to be retained by the club until the study of the subject is completed. At any time that extra help is wanted, Mrs. Blank is at liberty to write again to the Missouri Library Commission and ask for more books. The number is not limited, as the idea is to give the best possible service to each club as far as the stock of books in the possession of the Library Commission can do. At the end of the club year we see Mrs. Blank asking the members to return to the librarian all books bearing the mark of ownership of the Missouri Library Commission of Jefferson City. The librarian then repacks them in the same little cardboard case in which they were received and ships them back to the Missouri Library Commission. This time the express must be prepaid, as the law governing the Commission requires the payment of transportation by the borrowing club.

This circulation of half a dozen books at a time is a little thing, perchance, but we look upon it as part of the great movement which is as wide as the nation. The development of higher education of women began in 1819 and is a product of the 19th century, and the development of organized club work may be considered as beginning in 1890 with the incorporation of the General Federation of Women's Clubs. What it is and what it will be therefore is distinctly a product of the 20th century. The libraries of our country, particularly the public libraries, were developed along the present lines in the latter half of the 19th century. The creation of the first Library Commission is exactly contemporary with the organization of the General Federation in 1890. This parallelism of the clubs and library work is significant. A little thing you say, perhaps—the sending out of half a dozen books to Mrs. Blank—but let us multiply the case of Mrs. Blank by the 5,000 clubs in the United States with a membership of nearly 300,000 women! The libraries are helping the clubs and the clubs are helping the libraries all over the country. Truly, it is a work that thrills us as we write, and gladly our cry goes forth to our club mothers: "Let us prove our gratitude to you and join you in making horizons broader, hearthstones warmer, and cities, states and nations greater and truer."

HOW THE UNIVERSITY LIBRARY CAN HELP CLUB WOMEN.

(Miss Florence Whittier, Assistant Librarian, University of Missouri.)

One of the foremost ways in which the University library helps club women is by answering specific questions through its reference department and sending a book or two which will help the inquirer by giving her the best information on the subject in which she is interested. Often the reference department can be helpful by suggesting a more limited scope for discussion than the club women had planned.

Though the foregoing assistance is gladly given whenever practical, and about one hundred letters a month are written to inquirers in this State, the larger part of our work can be only suggestive. A university library must keep at the library all the books needed by its faculty and students and so many times we cannot lend the book needed. In such cases we send the titles and prices of the most helpful books.

There are several means by which people away from libraries can get the best printed information on their subjects. The Missouri Library Commission is organized to be the first aid to all readers in the State. Miss Elizabeth Wales, the secretary, at Jefferson City, Mo., will gladly send books to responsible people for simply the asking and the paying of transportation charges. Other large libraries in the State will gladly help inquirers.

There is also a publishing firm in Minneapolis, Minnesota, the H. W. Wilson Company, which, through its library department, will rent at a minimum rate magazine articles on any subject that has found its place on the pages of the leading magazines.

The University library will be glad if you will write us whenever you think we can help you.

AN INTERNATIONAL MOVEMENT FOR THE BETTERMENT OF RURAL HOMES.

(Miss Maude M. Griffith, Clinton, Mo.)

Missouri home makers, it gives me great pleasure to come before you and make an attempt at presenting a "verbal snap shot" of one of the greatest movements of the day—The International Congress of Farm Women.

Your president asked for a verbal snap shot—as I take it to impress upon me the fact that I must be instantaneous, but there was so much about this great congress which made such a profound impression upon me that I am at a loss to know what to say and just how to say it in order that you in any way might get an idea of the importance of this great movement and the still greater momentum it has gained in the bounds of one short year.

A nation cannot rise above its motherhood or above the influence of its home makers—hence how very important is any movement for the betterment of the home and home life.

This great meeting held at Lethbridge, in the province of Alberta, Canada, in connection with the Dry Farming Congress, has gone down as being the greatest agricultural movement or congress on record. Miss Whedon of St. Paul is responsible for the idea that it was "The meeting of the Ways," instead of "parting" of the ways—for it was truly an International Congress.

Women, and farm women, too, from the United States, Canada and far off old England, met with one accord and one purpose. Belgium sent greetings through a letter from the Baroness de Hertang, president of Belgian Congress of Farm Women. Delegates to the Dry Farming Congress from Persia, Palestine, Australia, India, China, Italy and Mexico, all brought greetings and good wishes from the women of their respective countries for the growth of this great movement.

This international movement for the betterment of rural home life was started in countries across the waters and now we find organizations working in Africa, Australia and Europe. The organization in Belgium alone has an enrollment of over 15,000 members.

Though it is new, this movement has come so near reaching the people and fulfilling the much felt needs of the time that the fields open for work are astonishing, both in number and extent.

The leaders of the rural life movement are a very cosmopolitan body, but all are very much interested in the great work of the agricultural world, and the "Back to the Farm" movement.

We find the great educators of the day very much concerned about this new, yet very important, undertaking. Many presidents of agricultural colleges were present and came with interest and enthusiasm for the growth of the work. The home economics departments of many agricultural colleges of the United States were represented by the lady at the head of said departments. Many leading agricultural papers of the country that are in any way interested in home life or that edit home departments were represented at the congress.

From the Canadian provinces came women who were in charge of institute work for women throughout the dominion and who were thoroughly conversant with the conditions and needs of the times. And, better still, one of the strongest factors of the congress was the body of those farm women themselves who have come into the light, caught the spirit of progress and have at heart the interests of womankind.

The president of the International Farm Women's Congress for the past year was a charming little lady from Winnepeg, who edits "Country Life in Canada," and is giving her time and strength to the interests of rural life.

The secretary was the wife of the secretary of the Dry Farming Congress, and was in a position to see and feel the demands of the time.

This movement being for farm women, there was a very strong sentiment in favor of a real farm woman being at the head of it. This led to the election of a president from the rank and file of rural women, in the person of Mrs. Harbut of Colorado, who gave a most interesting paper on labor-saving devices used in her own home, thus demonstrating her ability as architect, engineer and financier, all of which our ideal home makers must be. And I might just add that Mrs. Harbut is one woman who longed for country life and is delighted with the opportunities which are hers.

This past year the speakers were from both the scientific and the practical world, with scientific people in the majority. The sentiment of the congress was very strongly in favor of farm women being given preference on the program for ensuing years.

Dairying, poultry raising, demonstrations in home economics were all discussed by earnest practical people who spoke from their own experience, while from the scientific side women were discussed as wage earners, economic methods were demonstrated and food values were explained.

The professor of eugenics from Montana University gave some interesting as well as instructive facts on the subject. He would in no way have Cupid overlooked, and love eliminated from the matrimonial world, but for the physical and moral interests of the race he laid stress upon the fact that people should "fall in love intelligently."

So much for some of the people in the great movement; now for a few of the hopes and aims to be accomplished. Women of the cities have long had an unquestioned advantage over those of rural districts. The business man of the town has had the advantage over the man on the farm until within the past decade, but now the farmer is fast coming into his own place in the social and intellectual world. The farm woman, however, has not kept pace with the progress of the times. Where there were improvements made, new machinery installed, labor-saving devices experimented with, they have been for the farmer himself. His good wife has been plodding along at the same pace set years ago, enduring hardships of toil and privation, and suffering herself to be unknown to the social world. The unit of all prosperity is the home; the important factor in the home is the mother; the nation's greatest asset is the child. So at once we see the important role home makers play in the great drama of life. One great aim of the congress is to cause an awakening among farm women; to show them how much more they can get out of life; to bring them in touch with the outside world and make of them social beings instead of beasts of burden. We want to improve farming, always, and to improve home making as well. So uninteresting and unattractive has the farm woman's life been that the tendency has been for girls to leave their country homes for the towns and cities. One chord was sounded throughout the Lethbridge meeting for giving women a woman's education, not a man's. One speaker was responsible for the idea that an educated man is but a man still, while an educated woman means an educated family and a refined home.

One of the first marks of civilization was when women quit the the fields and went into the house to make it home, and the standing of any nation in the civilized world is measured by the way its women are treated.

Many and weighty were the arguments showing that the environment of the ideal country home offered the greatest opportunities for producing great men and great women.

Women, or rather the girls of today, who are to be the women of tomorrow, should be taught to appreciate the advantages and opportunities which are theirs, but first the mother must be delighted with her home and home life. There must be no protest for life to be made worth while. Another aim, then, of the congress, is to bring women into a realization of the great opportunities which are theirs, help them see and have dreams of a beautiful, yet delightful life in touch with Mother Nature. I think Dr. Bailey touched this keynote in his lecture on "Woman's Part in the Country Life Movement," when he said, "The dream of life comes from the mother, but be sure that the country mother's dream of the future will be more than her dream was in the past." It is the dream of the congress to ultimately reach every farm woman the world around, and through some means bring her out of her seclusion, in touch with the world and to help make hers the beautiful life it can be. The International Farm Woman's Press Association, which is auxiliary to the International Congress, was organized with the ultimate aim of being a means of carrying the great work of the congress to the frontier and in some way to reach the masses. Delegates from the general congress and from the press association, too, were chosen to represent them in Belgium next June.

This was all in harmony with and a part of the Dry Farming Congress, the keynote of which was better farming, improved social conditions, and a plea for universal peace and prosperity.

The plans for this great work are as yet in embryo stage, and it is hoped that the dreams of today may be the realizations of tomorrow.

Delegates went away feeling that they could help start the world on according to a new schedule, and I for one was truly grateful for the privilege and honor that had been mine.

I trust that many women from Missouri may feel interested in this world-wide movement, and that our State will not speak in such feeble voice at the meeting to be held in Oklahoma next October. For the influence felt from people of all nations meeting as one great family, with one aim and one purpose, where the national emblems were unfurled as one great ensign, was most beautiful and the sentiment most sublime.

Missouri Country Life Conference.

OFFICERS.

President—W. L. Nelson, Columbia.
Vice-President—Paul Culver, Gower.
Secretary—R. H. Emberson, Columbia.
Treasurer—M. F. Miller, Columbia.

OBJECTS OF ORGANIZATION AND MINUTES OF FIRST MEETING.

The first country life conference held in connection with Missouri Farmers' Week took place in the auditorium of the Y. M. C. A. building at Columbia on the afternoons of January 14, 15, 16 and 17. The object of the meeting was to bring together for conference people who are interested in the great question now commonly spoken of as the country life problem. Those who were instrumental in the organization of the meeting believe that conferences of this kind will go far toward the upbuilding and betterment of country life, make it possible for the farmer to see more in his calling, and enable him to share more fully in the fruits of his labor.

The program provided for a discussion of five principal topics. "The Church and the Farmer," "The Rural School," "The Farm Home," "The Country Town" and "The Country Paper and the Farmer." All these subjects have to do directly with country life. They represent forces which must, in a large measure at least, make possible the realization of those better things for which every country life conference is striving.

It is a matter of regret that copies of all the excellent discussions and addresses of the convention could not be secured for publication in this report. The minutes of the secretary are as follows:

The first meeting of the Missouri Country Life Conference was held Tuesday afternoon, January 14, 1913, in the auditorium of the Y. M. C. A. building. The meeting was called to order by the chairman, W. L. Nelson. R. H. Emberson was appointed temporary secretary. The general topic was "The Country Church." Rev. Clair S. Adams of Decatur, Illinois, delivered an address on

"The Church and the Farmer." Discussions by Rev. Charles King, Ashland, Mo.; Rev. A. W. Taylor, Columbia, and Rev. Clarence Hatfield of Hoberg, followed. A motion prevailed that a committee of three be appointed on permanent organization.

The second session of the Country Life Conference, held Wednesday afternoon, was called to order by the chairman, R. H. Emberson. Rev. W. A. Taylor was appointed temporary secretary. The general topic of the first section of the meeting was "The Rural School." An address, "The Rural School Problem," was given by the chairman; "Difficulties in Building up a Rural School" by Miss Tillie McHarg, Columbia; "The Co-operation of Patrons" by Mr. W. F. Hope, Montgomery City; "Some Changes Needed in the Country Schools" by Mr. G. W. Reavis, Jefferson City; "Education of the Farmers' Daughter" by Rev. Joseph L. Garvin, Fulton. "The Country Home" was the subject for discussion during the latter part of this meeting. An address, "The Farm Home," was given by Mrs. Sue Stone Smith of Weston. Discussion by Mrs. Mabel Miller, Osceola; Miss Pearle Mitchell, Rocheport; Mrs. Horace Windsor, Boonville, and Miss Alice Kinney, New Franklin, followed.

The meeting of Thursday afternoon was called to order by the chairman, T. C. Wilson, R. H. Emberson was appointed temporary secretary. The general topic was "The Country Town." An address, "The Country Town," was given by William Hirth, Columbia; "Farm Loans," by Sam Jordan, Sedalia; "The Boosters' Club" by Mr. M. V. Carroll, Sedalia; "The Trenton Idea," by Father Henry B. Tierney, Trenton. The committee on permanent organization reported as follows: W. L. Nelson, Columbia, president; Paul Culver, Gower, vice-president; R. H. Emberson, Columbia, secretary; F. M. Miller, Columbia, treasurer. The officers were created an advisory board. A motion prevailed that a committee of three be appointed to draft a constitution and by-laws for the association.

On Friday afternoon the meeting was called to order by the chairman, H. F. Childers. The general topic was "The Country Press." "The Country Paper and the Farmer" was the subject of an address by Ovid Bell of Fulton. Discussion was participated in by Doc Brydon, Essex; C. L. Overall, Campbell; C. L. Hobart, Holden, L. M. White, Mexico; Jewell Mayes, Richmond; W. L. Nelson, Columbia; R. H. Emberson, Columbia, and Senator C. F. Carter, Kahoka.

REPORT OF SESSION DEVOTED TO DISCUSSION OF THE COUNTRY CHURCH.

THE CHURCH AND THE FARMER.

(Reverend Clair S. Adams, Decatur, Illinois, Field Assistant, Department of Church and Country Life of the Board of Home Missions of Presbyterian Church.)

Friends, I am glad to be with you this afternoon. Ten years ago had I looked forward to this day and realized that country preachers would be asked to come to this great State University and uphold the country church, which at that time seemed to be left out of all consideration and thought, I certainly would have believed I was dreaming. And I am glad to live in these days in which we begin to realize that we are improving and getting back to the fountain head of our civilization, the farm, and to rejoice that the church, the school, the agricultural college, and the newspaper in the country town are beginning to find each other. Instead of living the solitary lives as we did back yonder on the farm, going about our daily tasks and going out on Sunday afternoons to country appointments, utterly alone and leading a lonely life, we are constantly awakening and beginning to realize that this glitter and glint of materialism that has almost intoxicated the world in the growth of the big things has missed its mark. We realize, too, that we have been missing the height of our civilization because we have been neglecting the open country, God's open country, from which will ever come the influence and the streams that have kept pure the life of this old sinful world; and so I esteem that it is a privilege that I have in being invited to talk to you.

I am told that this is your first gathering. I want to congratulate you. I lately attended a meeting similar to this at Ames, Iowa, and I also attended two or three in other states before that, and you are to be congratulated heartily on your attendance here, for I do not think that the attendance at those meetings after having them two or three years, equaled the attendance that we have here this afternoon.

I am glad to learn that we are taking up as two of the first topics of the first day of this Farmers' Week, the rural church and the country school. I believe we are putting the emphasis in the right place, as I believe the country church is the most important institution that we have to lift up mankind toward better things, and if we can only bring into such rural conferences as this the farmers and cause them to realize their divine position, (and their condition is divine), we will have accomplished much good, because the farmer is doing the work that God meant man to do. He is the only man when you stop to think of it, who works with God in the realm of nature and whom God has blessed through all ages. Take the Bible. It is distinctly a farmers' book. The old Patriarchs were all farmers and herdsmen. Talk about rotation of crops and soil conservation, it is there in the Old Testament. "The Earth is the Lord's" is its teaching. And when "in the fullness of time" Christ came, His birth was first announced on the plains of Bethlehem, out there in the open country, where the shepherds watched their flocks by night, where it was so clear that they could catch the vision of the angels, and the night so still that they could hear the heavenly harmonies; and so it was to farmers that God first revealed His greatest gift that He has ever given to this world. So I will esteem it a privilege if I can give you any message that will make you realize the greatness of the church which ministers to God's people in the fields.

Perhaps I ought to say just a word or two relative to myself. Your leader has told me that a great many people have asked, "Who is this man Adams, and where did he come from?" May I give you a little of my family history? My people were farmers and I lived on the farm until called into the sacred office of the gospel ministry. When first I became a minister sometimes there were invitations to go to the city churches, yet I loved the open country—it was born in me—and so I chose to pass my life with the sometimes despised, often times abandoned, and very often most discouraged country community and country church. I brought to them visions, and perhaps because of that, I have been called into the Department of Church and Country Life of our Home Board of Missions, to the task of going about the country and helping the country churches to a new vision of what God meant they should be, and about the important place they should occupy in the world. Now, again, I think I am fitted for this position because of an interdenominational training. Although I am a member of the Presbyterian church, my people have been connected with a number of other churches, not because they belonged to that crowd of "gadites" and "leavites" that we find in the churches today, just as much as they had them back yonder in the Bible times, but because at different times they moved from farm to farm and it was their belief that it was their duty to cast their lot with the church nearest home. They did this and put their church letters in the nearest church and attended that church. Thus, they entered the Presbyterian, the Congregational, the Methodist, and attended the Christian church and United Brethren.

And, friends, I am glad to see that we are beginning to find each other in all denominations and we are beginning to get together in our churches. All denominations are good, and there are good people in all denominations. I like the good people in any church better than I do the bad people in my own church, and I feel that I am a good deal nearer to such people. I feel that perhaps I can help them, and I know that they can help me.

It will be my pleasure to talk to you tonight on "The Rural Church Problem in America," so I shall only open up our topic this afternoon. I know the time will be occupied because I know you will be asking questions and giving testimonials, and that this will be a regular country church meeting after we get these speakers off the program. You know we are not the kind of people who say, and we are not supposed to say "eyther" and "nyther" and all that kind of formal talk, but we just talk face to face with each other, as good people should, and I am going to indulge in that, talking that way to you, because that is the right way.

The topic assigned to me was the "Relationship of the Church to the Farmer." I want to say, first of all, that the relationship of the present-day farmer seems to be like that of the Prodigal son when he was in the far country. The American farmer has wasted his substance in riotous living, he has wasted his resources, and I believe it is as much the duty of the church today as it was the love of the father then to look out for this prodigal. Let me illustrate by my own history as to this. My great-grandfather was born in New England, in Quincy, Massachusetts—and about one hundred and fifty years ago the soil in that section began to give way, and become depleted. He then moved out to what was then the west—to Vermont. There he started up a new farm where my grandfather was born, remaining in the foothills of Vermont until he was a young man. By that time the farm began to wear out, then grandfather moved west to Northern Ohio—to the old western reserve. There he took up a farm where my father was born. When father became a man, that land began to lose in fertility, so my father moved to Illinois. When I became a man there was no more open west for me to go to. There was nothing to do but remain in Illinois. All I could do was to go back, and that is one of the things that faces us now. There is no more west. I say that here in America we have been like the Prodigal Son, because there has been that inexhaustible supply of land—these vast prairies to the west of us, and because it was a good deal cheaper for us to pick up and move to new unbroken land, to a virgin soil, as it was in the beginning, just as it was when God created and looked upon and called it good. That was cheaper, easier, and better than building up the depleted farm. But that is a thing of the past; we have come to the end of that now. We have been prodigal towards our resources and we have wasted our substance in riotous living. That is the cause of the condition of the rural farmer today, and it is a religious job to call him back to the God-given plan.

The Country Life Commission that Theodore Roosevelt sent out reported that from a canvass of 125,000 farmers all over the United States they found it universally true that there was a consciousness of a sort of agricultural unrest. We consider some of these things in order to get the problem before us and talk of the relationship that the church may have to this problem.

There is in the age a spirit of restlessness that moves even on the farm, and that has been especially noticeable in the last twelve or fifteen years. Ten or twelve years ago a man did not put a dollar sign on his front gate. The farm was home to him; it was the home of his fathers; it was a dear place; it was sacred soil. Now that speculation is rife and prevalent, and success is marked by profits on the farm, it is different. I have a clipping here in my pocket from one of our papers in Decatur which tells of a farmer, by many called a fool, who just refused $425 an acre for Macon county land. That farm was home to him. Do you know there are some things money cannot buy, some things that money cannot touch, some things that you cannot put a dollar mark on! Of course, that farm is not worth $425 on the market, but there are memories there, associations and influences, and a kind of hovering of visions over that 80 acres so dear to that man that no price can measure such values. I want to tell you that people of that kind are rare, the old-fashioned man that does not put a dollar mark on his front gate and sell out and go somewhere else. And so we have that restless spirit that lays hold of our farmer. In the central part of our state of Illinois 52 per cent of the farms are in the hands of renters. Between the owner of the soil who will not put any improvements on the land, because he can get just as much cash rent for it without improvements, and the tenant who rents from year to year and who must of necessity raise one-year crops in order to get out of the soil what he has put into it in labor and money—between this, the upper and nether millstone of the owner and the tenant—the soil is losing in production and fertility.

I think statistics show that in Ohio there are thirty-three counties that are today producing less than they produced before the war, and that in spite of the fact that the inhabitants of Ohio are several million greater than they were at that time. This condition has brought on dissatisfaction and restlessness. But this is not entirely harmful, because when we begin to get restless we look out for a remedy and it shows we are really alive and not dead. So I do not think we ought to condemn or emphasize this dissatisfaction too much. It is a sign that we are striving for better things. Perhaps we do not know just what we need but we are pressing on and the American farmer, I believe, is going on until he gets to the place that God meant him to occupy in our country life.

Another thing: The farmer too long has been at the mercy of those with whom he does business. He has lost at both ends of the line. There is no other man in the world who has been treated or cheated in the way the farmer has. Here is a blacksmith in your town. True enough he has to buy all of his things, but he makes his profit from his trade. It is the same way with the groceryman, the druggist and the lumberman. Each one dictates the price of something. If a farmer comes to the blacksmith to get a horse shod, it is so much. The smith figures his bill in some way to get even and make a profit. It is true of every trade, it is true with every man of profession, every tradesman that you have to deal with. But the farmer does not do that. Whenever you farmers have anything you want to buy you say to some one else, "How much is it?" And whenever you have anything to sell you ask, "Well, what will you give me?" So you lose at both ends, and that is one of the things that has led to this deplorable condition of the American farming class. For this reason, I welcome the time when the farmers will begin to co-operate with each other.

But you say, "The farmer is an independent man." Yes, we are so independent that we are foolish. We are so independent that we have been at the mercy of all of these organizations and institutions that have fed upon us and it is time, yea, high time, it seems to me, that the farmers were getting together and having something to say about some of these profits that go so largely to the middleman. The farmer has been like little David out there in the fields, while his big brothers of the city passed in review before the prophet. The city's growth is a thing that is world wide in extent, and during all the time that these changes have been going on in every institution and every department of life of the great world's growth, your country church has remained the same. It has not progressed.

I have in mind how a church in Pike county where it was my privilege to hold a meeting not many months ago. This old church is sixteen miles southwest of Bowling Green. Fifty years ago when it was built farmers perhaps harvested their wheat with a sickle, cut their hay with a scythe, plowed the fields with an old-fashioned plow with a wooden mold board and an iron point. Every implement about the farm was of the "armstrong" character. Everything was as crude as it was when some of you, my friends, were boys and girls, or your parents were young men and young women.

Do you older men and women ever stop to think of the wonderful advancement and tremendous progress that has been made within the lifetime of some of your friends? When you were boys and girls, farming was conducted practically the same as it was when Ruth gleaned in the fields of Boaz, hundreds and thousands of years ago. During all of this marvelous advancement of the past generation the old church stands there the same, and has not had a bit of weatherboard changed all these years; the seats are the same old straight-back seats; the pulpit is the same "cracker-box" arrangement, and the old lamps are the same old coal oil lamps that drip and smoke. When you enter that building you go back fifty or seventy-five years. That is one of the things that is the matter with the country church; it has not moved along and kept pace with other great institutions and has not made the advancement and progress they have made. In a few minutes I will tell you why it has remained in the same condition. What is true of the church is largely true of the rural school.

Why is it that people who journey from across the sea to become citizens here, those that come to America to find homes—why is it they all go into the city? The larger portion of immigrants that come to this country are farmers. Why do they not farm in this country? I will tell you why. Because farming in this country has not been regarded in the same light that it is in the old country. Take a farmer in any of the European countries and he is looked upon as the highest man in the country—the leader of the community, but here he is ridiculed by the city people. So, largely because of this, our high tide of immigration has been turned from the open fields into the great city. In these cities many have fallen into awful vices and temptations, sometimes because they have not been warned against them or because they have not been properly prepared. We will continue to have such conditions until there are more meetings of this kind, until churches and schools join in conferences and demonstrations such as this Farmers' Week. Then may we hope for agricultural interests to prosper and the country to be a place of broad vision and noble living.

Just a few words about the condition of the country church today. I have already indicated some of the symptoms. But thank God, the country church is not deserting the field. Though every other institution, the country store, the country physician, and the country factory, has deserted the country, the church is still there. Perhaps the country factory was there by the crossroads where they made some wagons and some plows. I remember in Northern Ohio not more than fifty houses clustered around a little village, but there was a little factory, two little factories, in fact, where industrious men who did not have work all the year on the farm could find employment in the winter. There was a little country store. There was community interest—a debating society, a literary society, a singing school, and all those delightful social functions that drew us together and made us one. That is all over. I went back to that community just a few years ago and those factories and stores were closed, and the people were getting their goods from mail order houses in the big cities.

The trouble with us is that the church has been starved. The country church is doing more for the uplift of our race, for the money invested in it, than any other institution in the world. You have permitted your ministers to be neglected and half-starved, you have not looked after them with the same care and attention that you have other institutions in which you are interested. I come from Illinois, one of the richest states in the world, agriculturally, I believe. There, $425 an acre was refused for an 80-acre tract of land. That is going some, when we talk of farm values. Do you know what we paid our preachers in that section, in the 225 churches that I visited two years ago? We paid the miserable sum of $837.35 a year, on the average. I say shame! How far does that go in these days of high living? You will go out and pay four or five thousand dollars for an automobile and then give only five dollars towards that little country church. I want to tell you that as a financial investment the best way you can keep up the price of your land is by keeping up that little country church that lies closest to your land. What is it that puts a price on soil? There is some soil in Arkansas that is richer than Illinois soil, I suppose, but it is not so valuable. Why? What makes the difference? I will tell you. The character of the people makes the difference and what institution of all others makes character? The church. In the west there are some plains and prairies that are almost inexhaustible in richness, like Egypt of old. Why do you not go out there to live and bring up your families? You do not want to take your families there; you think too much of them, and it could not be home. What is it that is keeping up the price of soil? I tell you it is the church behind it. Wherever you find country churches receiving proper support and an interest being taken in them you will find that the land is high. I will take you to the Rock Creek community in Illinois where people will not sell at any price. Why? It is because of the country school, and the country church; they have community interest. They have one of the best high schools in the state. The young men and women going out to that country high school eight miles from town and graduating from it have the best records of any young people in the state for high school education. And that is not all; they have an agricultural experiment station; their minister lives there; they have lecture courses, farmers' clubs, singing schools, debating societies and there is scarcely a night in the year that those church doors are not open and the bells ringing because of some entertainment there for the community.

When I came to this meeting I left my book of notes that I use to speak from, so I am just speaking this afternoon extemporaneously. Maybe it is a good thing because we thus talk face to face and we are accustomed to people talking to us that way. But let me get back to the money question. I tell you, friends, I want to appeal to you farmers. I want to appeal to you people to help support the country church, and if you live in town and your farm is out in the country, what you ought to do, as owner of that land, as one interested in keeping up the price of that land, is to contribute towards the support of the church in the country community as well as the church you are supporting in town, and if you do not, you will see the price of your land go down. The country church is, as I said a moment ago, the institution for the uplifting of people towards the vision of things that makes clean minds, into an atmosphere of fellowship and sympathy. It is this kind of society that puts the price on things, and it is not the bare things themselves which come out of the ground.

I think in speaking of this I should tell you of an experience that happened to me not long ago. One of the leaders in our church was from a little country town. I went to see him, went into his bank, and he said to me, "Mr. Adams, I want to show you what we have been doing back here in our director's room." I went to the room and found it fitted up elegantly with beautiful furniture. I turned to him and said, "Elder, when will it be that we can have such things and such surroundings to work with in the country church, when will that time come?" He hung his head—we have the same old pews. Here he has these fine things for his business. You have fine machinery and think more of it and of the shelter of your hogs and cattle than you do for the moral and spiritual welfare of your boys and girls. I am just talking brass tacks this afternoon. And that condition will continue as long as we have hundreds of dollars for automobiles, and pennies and nickels for the Lord.

I want to speak just a moment or two longer. I want to tell of what we can do in the country church. I want to say that it is because of the country church that these city churches can do something. They ought to do a whole lot for the country church, for if it were not for our country churches the city church would soon die. If any of your people are from the city you put that down because it is true. You take any of our church records, I do not care which one it is, and you go down through the columns and notice the additions in membership. I suppose you have the same columns we have. One column denotes the members that came in the church by confession of faith and another column indicates those that have come in by certificates from other churches. If you take any city church of any denomination, I don't care what it is, and go over the records you will find that the number that came in by letter is larger many times than the number that came in by confession of faith. Whereas in the country church you will find very rarely where people were received by letter but they have to go out and teach them the life of God and bring them to Him by confession. I was out in Hutchinson, Kan., not long ago to a state agricultural congress; I was entertained by our pastor and he said that in his church since the first of August—it was about the last of November that I was there—ninety-eight Presbyterian families had moved into Hutchinson, Kan., from the towns about there. Sixty of this number are church members, identified with our church, and the other thirty-eight are families that are naturally identified with the church. There is a little church of itself that has come in from the country roundabout. And so I say that the city church owes it to the country church to send us strong men, her laymen up there, to help in this work and to help preach in these country churches and to help them see the vision.

When you talk about the country church question do you know we are only getting back to the old problem and things that we have lost sight of? Take that word parson; "parson" and "person" have the same root meaning. The parson was the leading person in the community in which he lived in those old Puritan times. He was the leader in everything, in social life, in spiritual life, in educational life. He was also teacher of the school. He was the one that stood back of everything. He was the parson, the person of the community, and when I am pleading today for the church to get back in that old Puritan idea I am not pleading for new things, I am not talking anything new, I am distinctly orthodox. It was then that the parson was the adviser, he was the man that was looked up to. I do not want you to look up to me, I am not talking in that spirit, but I want you to realize today and I want you to tell your minister, if he is not here, that he has a leading place in that community, and I want you to help him get up into that place. And so the task of the country church is largely getting back again to this realization of the church's place in the world. And then again, last of all, the church, as someone said, is the soul of civilization, and if our civilization is to be safe from materialism if our country is to be a great nation instead of a great congregation, if our country, to my mind, is to stand and is not to fall, as other Republics have fallen, it can only be, as we realize that the church of Jesus Christ is the soul for all advancement, giving impetus, giving heart, giving love, giving vision to the boys and girls, and so keeping their hearts and minds set upon the things that are infinite. So do you not see the tremendous task we have before us for the country church?

Again, let me say that the church must minister to the country. She must realize her obligation. Sometimes on our church announcement we will see this statement: Services will be held in such and such a church at such and such an hour. That is not the right way to put it. You worship God in the church; that is the only thing you can do in the church. But the place of service is the six days that are outside of that church. But we never can do this until we realize this great vision, until we realize the great importance of the tremendous task that is upon us, that the church is not to be ministered unto, but to minister and give her life. You take that old Bible that we all love, God's book, God's word and soul, and you can just put it all into two words—the whole gospel in two words. As long as a man is away from God the message is "Come," God's love speaking it out. But when we have accepted this wondrous gift of God, then God has another word for us, and that word is "Go," and we have not been going. We have been content to make the churches a kind of mutual admiration society. We have been content to put the emphasis upon the church and not upon Christ, until all over this country we have this kind of religion (I do not like that word but I still use it, for we all know better)—a kind of "churchianity" instead of Christianity, and until we get our vision upon this task and not upon the instrument that is to be used in bringing in God's Kingdom, we will only selfishly exist. The church must realize that the farmers are God's men. If there is a man in the world that has to be honest it is the farmer. You cannot cheat the soil; if you do you lose money. You must be honest. And so I say the farmer is God's hired man, and God is a sympathetic landlord. The farmer is working together with God throughout the seasons of the year. God is giving him the showers and God is giving him the strength and God is giving him seedtime and the time of the harvest, and he is working out God's plans, and he is knowing more and more by conferences of this kind, and understanding more and more the laws of God.

And then, last of all, we must constantly exalt the spiritual ideas, and in this age in which materialism has seemingly intoxicated our civilization we need to lift men up and up and up, that they may realize "that a man's life consisteth not in the abundance of the things which he possesseth."

THE RURAL CHURCH.

(Rev. Charles King, Ashland, Mo.)

The great national problem of today is the rehabilitation of rural life, while the great religious problem is the salvation of the rural church.

Rev. Chas. King.

The rural districts in all the settled portions of the United States are losing in population, and our rural churches are on the decline, both in numbers, spiritual power and usefulness. Many thousands of churches have died in recent years, and many more thousands are in a sick and dying condition. This situation calls for careful diagnosis and immediate repair.

Thousands of our choicest young men and young women who go from the country to the colleges do not return, but find their life work in the cities and in the towns, and in their choice of a calling they are but carrying out the life plan and ambition of their fathers and mothers and are finding the place toward which all their college training and environment has led them. In this deplorable exodus from the country many of our churches have suffered irreparable loss, both in their leaders of the present and in their prospective leaders of the future.

In some rural communities there are few young people and especially is there a dearth of young men. In five rural churches which I have served in recent years the resident membership numbers 283. Of this number 124 are men and boys, 74 of them being heads of families and all past fifty years of age. These 74, representing 74 homes, have only 19 sons who are now identified with these churches. These figures fairly represent conditions on many other fields.

There is in all our rural churches a general indifference toward religion, and the obligations of church membership are by many regarded with absolute unconcern. The rural church is recruiting but few men for the ministry, and is developing but few preachers of marked ability and spiritual power.

It is the general opinion that our young men are not responding to God's call to preach. This does not cover the situation. The fact is God is not calling them. If He calls, they will answer. The long continued spiritual ill-health of the church precludes the free operation of the Spirit of God in recruiting the ministry, and in making the ministry effective. A weak church makes a weak ministry, and we need look for no ministry of greater efficiency until it has a better parentage.

Strange to relate, from these sick and dying churches comes no call of distress. As a rule they do not fear death, and have no particular concern for the future. The people seem to be reconciled to their losses, and the prospect of death occasions no apparent alarm; as a matter of fact, the people seem not only to be reconciled to, but entirely satisfied with, conditions.

There are few religious books and magazines, some denominational papers and plenty of Bibles in the homes, but all pass unread and unused.

This decline of our rural churches is mainly due to the decadence of faith, and now is the crux of the whole situation.

We cannot overestimate the value of the rural community and the rural church when we consider the fact that at the present time about seventy-five per cent of all the leaders in the various activities of life are born and reared in the rural districts and small towns. This is the nation's base of supplies, and from thence comes its leaders—the people who rule the world.

John R. Mott says: "The cities cannot be relied upon to furnish the Christian leaders of the future. The work of the country church must be carried on with efficiency and power in order to insure the raising up of sufficient Christian forces to cultivate the city fields."

To face the fact soberly and honestly, to discern the causes of decay and to apply the remedies—this is the privilege and the imperative duty of all the Lord's people. In the words of Kenyon L. Butterfield "The country church faces a crisis." He also says, "I hold that the problem of the country church is the most important aspect of the rural problem. It touches the highest point in the re-direction of rural life."

On August 10, 1908, President Roosevelt, in the development of one phase of his conservation policy, appointed a commission on country life. In appointing this commission he had this to say: "No nation has ever achieved permanent greatness unless this greatness was based on the well-being of the great farmer class, the men who live on the soil; for it is upon their welfare, material and moral, that the welfare of the rest of the nation ultimately rests."

The integrity of all religious institutions and of our national existence itself is dependent upon the integrity of our rural population and our rural institutions. Paganism in the country will most surely bring paganism in the city. If we lose the rural church we lose all, and along with religious decay and paganism will come national decay and national extinction.

The interest in the problem of the rural church is of very recent origin, although the problem has existed for many years. This interest is now nation wide, though it is by no means nation deep. This interest is found, for the most part, among the leaders in denominational affairs, but strange to say, it has not yet, in any considerable degree, reached the rural churches.

Practically without exception, it is insisted that the rehabilitation of rural life must precede the salvation of the rural church. The call is for "better farming, better business and better living."

It is also proposed that social, recreational and educational functions be included in the program of the church's activities; that the church provide entertainment for the entire community, that it employ the Y. M. C. A. program of recreation, and that it provide instruction in scientific agriculture, domestic science, sanitation, and other subjects of rural life betterment.

The experts also suggest that a great central undenominational church be substituted for the local denominational churches. This will not solve the rural church problem nor will it meet the needs of the present rural population.

An undenominational church is not likely to be a New Testament Church, and without fidelity to the Scriptures it cannot enjoy the favor of God. Outward evidences of prosperity are not certain evidence of a New Testament Church. The spiritual extinction of the church may go hand in hand with its physical extension.

Without qualification, I insist that the rural church shall find its salvation, not in supplying the material, but rather in supplying the spiritual needs of the people whom it seeks to serve. The rural church must keep close to the Gospel and close to the ground if it would fill the mission for which it was designed.

Until recent years the rural church has been a great soul-winning institution, now it has professions of faith. We are having frequent accessions to membership, but they are adding but little to the spiritual power and working force of the church; we are in so much haste in our soul winning that we try to land our converts with one jerk of the arm, and consequently they are seldom converts at all, merely accessions to the church. A quick conversion leads often to a quick desertion. A few orthodox questions answered in the affirmative do not necessarily make a convert.

The tragedy of modern evangelism is not that converts are hand picked, but alas, that they are handmade. Hand-picked fruit ought to be the very best, but much unripe fruit is spoiled in the picking. The personal work such as is usually perpetrated in the evangelistic campaign is a fraud and a crime, and the prospective convert gets a gold brick. This kind of evangelism may promote outward prosperity, but brings inward decay. The membership of the church grows, but the New Testament Church disappears.

The time has come when we ought to be honest with the unsaved. The only effective evangelism is the kind that grows out of a warm heart, that honors the Word of God, that finds access to a throne of grace, and that takes account of the necessity of a new birth. This kind of evangelism is the glorious plan of God.

The supreme need of the rural church today is the fear of God. Without this all other remedies must fail. Whether in city, town or country, the Lord's people have forgotten God. They have few spiritual aspirations, they have little love for Christ and little love for a lost world. The Presbyterian Survey in Illinois has this comment: "The abandoned church is a silent witness to a community's decadence of faith in God and love of His House." Without repentance and a real turning to God there is no salvation for the rural church. The Lord's people must learn to have less zeal for gold and more zeal for God, less zeal for play and more zeal for prayer, less zeal for self and more zeal for service.

Another great need of the rural church is a vision of service. The rural church sometimes lives very much to itself and has but little concern for its own community and for a lost world. If it will give itself to the service of the people—all the people—its perpetuity is assured. Every member of the church ought to press the claims of Christ upon all, and the command is to go out into the highways and hedges and compel them to come to the feast.

The rural church must have frequent gatherings. At least one meeting on every Lord's Day is absolutely essential to the prosperity; and this service must be for all the people of the community. It ought to be the aim of the rural church to have every family in the community in the Lord's House on the Lord's Day.

It is a fact that there is much unconsecrated wealth in our country churches. If country people would have the favor of God, they must pay God what they owe Him—the rent on the land. Religion demands not only consecration of soul, but also consecration of soil.

All missions and denominational benevolences must have a place in the rural church program, if it cares to live.

The rural church needs indoctrination. Scriptural indoctrination of the Lord's people will be no hindrance to Scriptural prosperity. If the church fails to indoctrinate it will soon fail to propagate.

The rural churches must have good Bible schools. In many of our churches the Bible school is in either partial or total eclipse. Its parentage is recognized by all, and its orphanage is the shame of many.

The rural church needs a testimony meeting. It is essential to individual Christians, Christian progress, and to church progress that some frequent opportunity be given the Lord's people to relate their Christian experiences, and to testify to the grace of God.

The rural church must find and train local leaders. Next in importance is the preaching service; this is the pastor's chief concern, and great opportunity.

The rural church must cultivate its marginal people. The marginal people of the community—those living on the margin of the church's territory and those living on the margin of existence—must not be neglected by the rural church. To neglect them is to neglect a field which, if cultivated, will enrich the whole church. All the unchurched, the foreigner and usually the tenant and the hired man, belong to this class.

The rural church must encourage better living. The need of better living on the part of country people is recognized by all except the country people themselves. It is considered one of the fundamental needs in the rehabilitation of rural life.

The rural church needs mothers. It cannot be denied that our rural districts are in great need of mothers—women of piety and common sense, who will bring up their children in the fear of the Lord; who will instruct their sons in the nobility of manly virtues, and their daughters in the dignity of womanly graces and motherhood; who will teach their children the delight of honest toil and wholesome recreation and whose ambition will be to keep them on the farm.

Another great need in the rural community is a crop of babies. As a rule, this crop is in inverse ratio to other crops.

The rural church needs boys. The Lord's people must find some way to keep their boys on the farm. The boy who in youth is "worked out" for his father's gain, will, in manhood, "strike out" for his own. He must be given a square deal.

Our rural churches are, almost without exception, greatly in need of better and more serviceable houses, with Bible school and lecture rooms, better lighting and heating plants, better seats, more song books, and by all means better care of the church building and premises.

A women's meeting, promoted by the women of the church for all the women of the community, can be made to serve the church and the community in many ways. These meetings may combine social, educational and devotional features. Missions, benevolence, temperance, child welfare, good literature and other matters of material and religious concern may properly have their consideration and support.

The rural church can well afford to promote an occasional singing school. The old-fashioned singing school can be made to contribute greatly to its prosperity.

Everywhere there is need of a sustained policy of scriptural discipline in the fear of God and without the fear of man. The church, which is the body of Christ, like Lazarus is full of sores; its health is impaired, its progress is impeded and its strength is gone. Without discipline there will be no restoration. The operation may be severe but the patient will survive, and the remnant that is saved will enjoy the favor of God and the respect of man.

Good roads may be of great service to the rural church. From the Missouri State Board of Agriculture Bulletin of the Highway Department (May, 1912), I quote the following: "All business and all classes of property are more or less affected by road conditions. The question of good roads is, therefore, at the present time, one of the most vital with which he have to deal. There are churches which, in some seasons, are almost abandoned because of bad conditions of the roads. Good roads may not be the whole solution for prosperity and happiness of country life, but they are a part of it—and a very necessary and important part of it."

The rural church may properly encourage some social and recreational gatherings. The Lord's people in the rural community are not meeting their obligations to themselves, to the young people, and to the neighborhood generally, unless they provide some social and recreational gatherings for all. The Lord's people must also interest themselves in farm improvement and every phase of rural life betterment.

A general and early revival of religion is the only hope of the rural churches, and without it all our programs will fail. The problem must be solved, not by the experts, but by the aspirations and insistent call of the Lord's people.

A resident ministry and longer pastorates are greatly needed on the rural field. The grouping of our rural churches is also greatly to be desired.

It is time for us to rediscover God and return to our first love; it is time for us to rearrange our schedules, and give God a place on the program; it is time for us to readjust our values and put God's Kingdom first. We must honor God's Word; we must take time to pray; we must keep the Lord's Day holy; we must go to the Lord's House to worship; we must pay God what we owe Him; we must bear testimony to God's grace; we must supply the world's need; then will His Kingdom come and Zion will prosper. The family altar and the family pew are in almost universal neglect and decay. These bulwarks of private and public devotion must be re-established without delay.

ADDRESS.

(Rev. Clarence E. Hatfield, Hoberg, Mo.)

There are times when to talk religion is merely a waste of time. I have always thought that when a man is milking a cow and the cow kicks and upsets the milk and the milk goes down Brother Jones' boot leg, that would be an awful poor time to talk religion to Mr. Jones, but if you come along and see that, and you had a cow that kicked you sometime in the past, and you know how to break the animal of her habit and tell Brother Jones, then when that is done he will listen to you while you talk religion. If he has been trying to raise barley or some other crop where the land needs grass or cowpeas to bring it into the production it ought to enjoy, and the preacher has given just a year or two to these problems that Mr. Jones needs to have solved, and he can go out to the farm and

Rev. Hatfield.

hitch his horse to a post and go in and help Mr. Jones and show him about these things and encourage him, the cause of religion will be set forward. How do I know this to be true? I have seen it tried and I know it will be a success.

What I have said is true from the pastoral standpoint, and until we do establish that personal interest from the preacher to the man and from the man to the preacher, our country churches never will be what they ought to be.

Our country church needs to take hold day by day. It has only been one-seventh of a week. The young people of every community ought to be gathered in that community, and if we do not we admit to ourselves that we haven't talent, and we cannot do that. We cannot admit that we haven't talent in every community throughout the length and breadth of old Missouri and the question of developing leadership is settled when we do that. We ought to bring the young people together in amusement and recreation in the community, and I say when you do this you cannot get too much religion in it. And the opportunities to so do that come throughout the year, the Fourth of July, Thanksgiving, Washington's Birthday, Christmas and New Years. At every opportunity bring them in and let them have something to do. There is one community in Missouri on Thanksgiving Day where 400 people sat down and ate dinner and had a splendid time. On the Fourth of July last there were two thousand people, under the direction of the church of that community who sat down and had dinner and spent the whole day long, not in shooting fire crackers, but in looking at and listening to a program put on by the young people of that community, and the next Sunday following that—it was a very warm day—the church didn't hold the people who came out to services and there were two meetings held, one in the church and one outside. Why was it? It was the Fourth of July meeting just a little while before. And so of these things, one leads to another. That is what happened in one community. As a result the people wanted a better road to go to church. In other gatherings held, these little social occasions, they began to talk about such things, about county needs, and began to get at them in that township. The parish I speak of is 12 miles long by 10 miles wide and it has seven churches in it, but this particular one has benefited in that way and the others are following it up, and the work is going on now quite rapidly. After the people had discussed better ways of getting to church and better roads, and wanting better roads to get to church over a movement started throughout the township, and the first thing anyone knew there were petitions up to the county court asking for an election to vote bonds to build rock roads in the township. They held an election and after the vote was counted there was no doubt of it and 90 miles of rock road were built in that township last year. Of course, we are not competent to judge of our own spirituality, but we do believe that the men of that community are just as good today as they were years ago when they had a man drive fifteen miles to preach to them, and during all of that time they had no regular preacher, and we do not think they have lost any desire for service.

Then, too, we ought to try to give the boys the same things, the joys, that the city boys have. I really think that most of you are farmers living on the farm and have something to do on the farm, and we have been told that the boy who follows the plow, drives up the cattle and milks, and all that sort of business, has exercise enough, but, as a matter of fact, it is not the right kind of exercise, it is not what he loves. What he needs is to gather with his chums and hit the punching bag and jump and romp around as the town boy, and that is what he loves. This is in keeping, it seems to me, with the services that our Savior performed when He was here in the world, and that He would like to have you and I perform, that we take hold of the boy and be a big sister and big brother of the boy on the farm. Why should they leave? They have everything that the town has and lots of things that the town has not. We have mail every day and telephones all over Missouri and good roads and good schools.

ADDRESS.

(Prof. A. W. Taylor, the Bible College of Missouri, Columbia.)

We have heard so many good things this afternoon that there is little left except to elaborate upon some of the points already made.

It was said that the salvation of the country depended upon the welfare of the rural district. I wonder if there is not even more in that than we think. When the country boy goes to the city he takes with him, into a new environment, the old basic moral traits. If he is a rank individualist he will become one of the modern commercial pirates against which there is so much protest today. If he thinks of all business transactions and of public welfare solely in terms of self-advantage when he is a farm lad, he will think of them in the same way when he becomes a part of the big complex business interests and a citizen in a municipality where there are so many advantages to be gained through political manipulation. Thus if the farmer should be a sort of primitive individualist in his attitude toward the community instead of being so well Christianized in his moral ideals that he puts public welfare by the side of private welfare, he will be the same sort of a selfish business man and politician when he gets into the city where his selfishness becomes so much more inimical to public welfare because life is so much more complex and men live and work less to themselves.

But we are here to talk more specifically about Missouri churches, especially about our rural churches. We have found that in this State only about ten per cent of all our country churches have resident pastors. For illustration, take the Baptists and Disciples, two of the strongest religious bodies in the State. They have together some 3,500 congregations and not more than 600 of them have resident pastors. Now, the country church can no more succeed without efficient pastoral care than can the town church. What is there about farmers that makes them less in need of church oversight and pastoral care than grocerymen and carpenters? For what reason can it be argued that a city church cannot succeed without a resident pastor but a country church can? Our rural churches are dying in many cases for lack of resident pastoral leadership. The speaker who said they were not afraid of death was right in his diagnosis; too many of them are afflicted with the paralysis of indifference due to lack of leadership and the ideals that the man who is trained to be a church expert, i. e., the pastor could bring, if he was resident with them, and gave them something of himself and his organizing ability as well as his sermons. After all, the sermon is not the only consideration in church life. It is paramount, perhaps, but it is only one phase of the religious work of a congregation. That of organized work is only a little less important, and the sermon multiplies its power immensely by being delivered to a congregation that is "tuned up" by the interest that comes through effective organized and active church life.

We are told that there are not enough preachers. I am inclined to think there are too many churches. If there were not more than one country church for every three miles square of farm region and a parish system were adopted, we would have much less trouble about ministerial supply and about church finances as well. The average parish of that size would include about 350 people—not too many certainly for a church, but instead we have three or four churches within reach of the same farm and such a division of interest that none of them is able to support a resident pastor. Thus they suffer from malnutrition. Why do we have this state of affairs? Because we each love our denomination better than we love our common Christian obligations to the community. Perhaps this is because we have not been brought face to face with the social obligations of religion as we have to the intellectual. Our creeds have been matters of belief, more than of action. There is more in our common faith than in any one of our creeds. In the great essential things that make for life we are agreed, why cannot we work together for them? I believe intensely in a community church in place of a denominational church. Nor do I think we will be called upon to give up any conviction to have a community church. Let each keep his own creed, but let us organize our community church for that Christian service in which we all agree, then by doing the will, we will more perfectly learn the doctrine. That was the advice of the great founder of the church universal. I supply a little country church thirteen miles from the railroad. Everybody goes—there is nowhere else to go. They come to hear me once a month, then go to hear three other men the other three Sundays. They all look alike to me, and to save my life I cannot tell from their lives which is the "ist" and which is the "ian." They are all good Christians, at least one church furnishes just as good Christians as does another, but we have no organized Christian life in that community capable of meeting community needs, and not one of the four churches is fulfilling its obligation to the community. We do not fight each other any more, we are working under a white flag; bye and bye we will raise the Master's red flag of the cross and will unite in our common faith and for a common task in that community, for after all we are all His disciples and the things that divide us do not in a single case reflect any moral differences.

There are four things, it seems to me, that we need to put stress upon in our efforts to better country life and to keep the boys on the farm. One is to have a community church and a resident pastor. The second is a country school that trains for country life and for farm interests more than for scholastic promotion and literary ideals. If we wish the children to love the country we must teach them to appreciate the country as much at least as they do books and the things that are to be found in towns alone. We must give scientific instruction in elementary things of farm life and educate them to be farmers more, even if we have to give less attention to preparing them for entrance to the town high school. In the third place, and this is a point we have ignored all too much, there must be more attention paid to recreation for the youth. This is one of the greatest opportunities offered the whole rural life movement today. Young people must associate and they must play. It is denial of nature to deny it, and it is a loss of the most open natural opportunity to fail to take advantage of it for moral and community welfare work. The church I spoke of a few minutes ago is always crowded with young people—there is no other place to go. A community center would be a great factor in the lives of those young people and I hope we are going to have one some day. There we could use their recreational and social interests as a means of education through entertainments, lectures, musicals and good reading and we could utilize the most open opportunity offered in the life of the youth for moral training. If it is not directed to good it may run wild and to the bad. The fourth and last point I have to make is that of co-operation. Co-operation is the thing to live by in these days. The bread and butter problem is the fundamental problem to all of us, and nothwithstanding the great rise in farm values and in the price of rural products, the average farmer is not yet getting too much for his hard labor. But he wastes a big annual profit through lack of co-operation. Every business he trades with uses the co-operative interest, he must use it for self-protection as well as self-advantage. When we get economical co-operation in the country we will have an open highway to every other kind of co-operation. The idea will leaven all rural life if it is seen to pay. It will make for the co-operative school and a combination of church interests. But even that must start with an ideal, for the ideal always must come before the practical, and I appeal to the churches in the country to furnish the ideal—for it is the ideal of Christianity.

REPORT OF SESSION DEVOTED TO THE RURAL SCHOOL AND THE FARM HOME.

THE RURAL SCHOOL PROBLEM.

(R. H. Emberson, Department of Rural Education, University of Missouri.)

Prof. Emberson.

People are beginning to realize that there is a country school problem. Before much can be done in the way of improvement, the actual conditions of these schools, their inefficiency, their failure to meet community needs, must first be made known. One of the most difficult things to accomplish is to get people to realize that these schools have not kept pace in the general progress of the country; as educational institutions they are in a state of arrested development.

The rural school of pioneer days served its purpose. Then the mother in the home and the father on the farm gave instruction in practical economics and manual training. Under those conditions the "three R's" were sufficient, as the real training in life was imparted in the home.

That the rural school does not meet the demands of modern conditions must be evident to everyone who has given the matter any consideration. With the coming of scientific inventions and scientific farming it has ceased to hold its place as an educational and social factor. Farmers are interested in good roads, rotation of crops, maintaining the fertility of the soil and improving the breeds of live stock, but it is very seldom that a community is vitally interested in building up the rural school.

No one favors consolidation of rural schools more than myself. I have advocated this plan in season and out of season and have worked with untiring energy for such organizations. I challenge anyone to show a more active interest in the matter of consolidation than myself. Yet, I am frank to say that there is still a place for the one-room rural school. If these schools could be housed in comfortable buildings, given good equipment and a good well-trained teacher they could do much to prepare the children for their place in modern life.

In order to arrive at a more definite understanding of the conditions of the rural schools of this State I recently sent out 250 blank reports asking for certain information. These schools represented the best and the poorest as well as the average found in several of the best counties of the State.

The combined report of these 250 schools shows the following:

Number of pupils enrolled, 6,059.

Number of pupils in 7th and 8th grades: boys, 224; girls, 346. Total, 570.

It will be seen that the enrollment of the two upper grades is about nine per cent of the total enrollment. It is safe to say that there is not more than four per cent of the total enrollment of these schools in the eighth grade or last year's work; that is, out of every hundred children enrolled in these schools, only four, on an average, finish the course.

Three-fourths of these schools report that the stove is placed in the middle of the room.

Seventeen out of every twenty report that there is no jacket around the stove.

One-fourth report the drinking water as bad.

These schools were asked to make mention of any improvements contemplated during the school year of 1912-13. About one-half of them responded to this question.

Following are some of the things being attempted and the number of schools making effort along each line:

Ninety-one schools were attempting to get more books for library.

Twenty-six schools were attempting to get stove jacketed.

Fifteen schools were attempting to get schools cleaned.

Fourteen schools were attempting to get some means of ventilation.

Fourteen schools were attempting to get better blackboards.

Twelve schools were attempting to get individual drinking cups.

Eleven schools were attempting to get better desks.

Nine schools were attempting to make better classification of schools.

Nine schools were attempting to clean yards.

Six schools were attempting to do some work in domestic science.

Four schools were attempting to hold parents' meetings.

These reports show the poor material conditions of a very large number of rural schools and it also shows that about one-half of the teachers are making no effort to improve them.

In the solution of the rural school problem it is necessary first to get people to understand the real conditions of these schools and then to create an ideal toward which all should strive. This work should begin with the child. Children should know what a well-constructed school building is, how the desks, stove, boards and maps should be arranged; they should understand the necessity of ventilation and how it should be done, also the necessity of pure drinking water; they should know what are the conditions of a modern rural school and should have some idea about school sanitation and decoration; they should be able to see how their own schoolhouse and grounds could be improved and they should understand the disadvantage under which they are placed. When children are once interested in this matter it will be easy to reach the homes, and when the homes once become interested changes for the better will soon be made.

Had good school conditions and higher ideals been taught the children of this State twenty years ago, the problem would not be so difficult at the present time.

A recent number of one of the St. Louis dailies contained an editorial on the city's progress during 1912. The first thing mentioned was the large number of homes; second was the splendid school system; third, the fine school buildings; fourth, the good condition of the banks.

This is the way the school system is regarded in a large city. The homes were placed first, which is right and proper, but the schools were considered second in importance. One would hardly know where to look for a sentiment of this kind in a country community. The building is usually the poorest in the district, the grounds are unattractive and the school as an institution receives so little attention that one would scarcely know that it is in existence.

In conclusion I wish to say that the rural school problem is not alone one for the educator. It must be studied by men and women in the midst of life's struggles. It is the duty and the privilege of every citizen to try to understand the nature of this problem and to assist in its solution.

DIFFICULTIES IN BUILDING UP A RURAL SCHOOL.

(Miss Tillie McHarg, Columbia.)

First of all, I wish to state that what I have to say does not apply to the district in which I am now teaching—the Robinett school. I have the hearty co-operation of the school board and most of the patrons. The board provides everything needed as far as it is able to do so.

I have met with these difficulties in other schools, however, and other teachers not so fortunate as myself still have them to contend with.

One of the first difficulties we meet with is the poor material conditions existing in the rural schools such as cold houses, uncomfortable desks, poor ventilation, uncurtained windows, lack of sanitary conditions and a lack of anything to cultivate the child's taste for the beautiful.

Another difficulty is poor equipment—no maps nor globes, no sand table nor table for concrete work. Should the school happen to have a case of maps, they are not usually hung where they can be used and not infrequently the teacher is afraid to use them for fear they will fall down on her head.

As a rule, there are no reference books on Geography, History or Agriculture, no supplementary readers and the library, if there is one, is usually very poor. A good deal of money has been spent for encyclopedias and unabridged dictionaries which the children cannot handle nor use to any advantage.

If the teacher makes an appeal for better things, her requests are often given no consideration at all and sometimes she is told that she has been employed to teach the school and not to make suggestions.

It is claimed by many that our course of study does not meet the needs of the rural communities. If this is true, I wish to say that it is not the fault of rural teachers. The course is made out at Jefferson City and the county superintendent and teachers are expected to co-operate in carrying it out. I am not unmindful of the beneficial effects of a wide use of a State course of study, for by it the State system is made uniform and more effective. However, on the other hand, teachers are left little option in the matter of presenting subject matter that is best adapted to meet the demands of a special community. Rural teachers are seldom consulted as to the contents of the course of study.

Poor attendance is another cause of unsatisfactory work in the rural schools. We cannot do good work when children do not attend regularly. Often this is not the fault of the child; it may be due to the indifference of parents or the bad condition of the roads.

There is a city school problem as well as a country school problem, but we do not hear much about the problem of the city. Why? Because the city is in close touch with the school system while on the other hand the country community scarcely knows that it has a public school system. Cities are putting time, money and talent into the solution of their problems while the country is doing very little. In any small town, the public school building is the most imposing structure in the place, while in the country these buildings do not compare favorably with the best barns.

The boards in the cities and towns have regular meetings and keep their eyes on the school work. The school patrons' associations are co-operating with the school boards and teachers for the advancement of the city schools. No such meetings are held in the rural districts. On the contrary, patrons in rural communities too often accept the report of the child concerning the success or failure of the school. There is no other important business concerning which grown people would be willing to accept the judgment of children.

In most country schools the enrollment is small. This is unfortunate from a social standpoint. However, a small school, if properly housed and equipped, might be a great factor for good in the community. No rural school board should boast of having a cheap school. The ideal should be the very best that can be afforded for the boys and girls. The board should not boast of how little money it has spent but of how well the funds have been spent.

Many of these difficulties could and would be overcome if the school boards were not so handicapped by lack of funds but as long as any disinterested person can go to the school meeting and vote on the school levy, our rural schools are going to have these difficulties to contend with.

The greatest benefit that has come to our rural schools since I began teaching is the law compelling rural districts to levy at least forty cents on the one hundred dollars valuation. They cannot run an eight months' school on a less levy. If the Legislature would take this power of voting on the school levy out of the disinterested parties' hands, we would have good schools.

Much of the blame for the poor conditions in our rural schools is charged up to the teachers. As a teacher speaking for teachers, I will say that we may have our faults and shortcomings; we may not be as well prepared for our work as we should be, but seldom do we get any encouragement in the way of an increase of salary, long tenure of position or even sympathetic support in order to make an improvement. I do not wish to plead an extenuation for the teachers but I do wish to say that we cannot solve this great problem alone and it is pertinent to ask what are the school board and patrons doing to make the rural schools any better?

THE CO-OPERATION OF PATRONS.

(W. T. Hupe, County Superintendent of Schools, Montgomery County, Mo.)

To most of us it seems self-evident that the hearty co-operation of patrons is absolutely essential to the success and progress of our schools. A proper discussion of the subject, it seems to me, demands a discussion of the causes of the absence of interest on the part of patrons. To answer the question, how to secure co-operation, imposes the necessity of discovering and removing the causes of its absence. Therefore a part of my paper deals with this phase of the subject.

Certain conditions are dependent upon the patrons and certain improvements and reforms essential to the welfare and progress of our schools must come directly from or through the patrons. When I became county superintendent, I worked hard with the teachers to improve conditions and bring about better teaching in our schools. We succeeded to some extent, but I soon discovered the teachers were not responsible for all the defects and inefficiency of our schools, and that some improvements and some remedies must come from and through the patrons. I use the term "remedies" advisedly, for it is a fact, and a lamentable fact, that our schools and our school system have long and greatly suffered because of certain faults and defects which must be remedied or corrected before our schools can do the work they should do. Now, do not hold up your hands in horror, or mob me because I said our school system needs "remedies." And do not charge me with being carried away with the articles in the Ladies' Home Journal. I am not. I have for several years been advocating and fighting for some of the very reforms the Ladies' Home Journal is urging. Permit me to digress just a little here and say that while the articles referred to may be in some respects unjust or exaggerated, they are in many respects opportune and will have a salutary effect. It is time we were awakening to some defects and evils in our system and practices. It is time we were effecting reforms and improvements that will stop the physical and mental slaughter of our boys and girls and that will help them to their true heritage. I want to say, however, that the teachers and school men are not alone responsible for these defects and wrong practices of our educational system. I take it that, besides teachers and school men, I am speaking to many patrons, and I want it understood that to a considerable extent the patrons are responsible for these conditions, and their correction must come through and by your hearty co-operation. In a certain district in my county the school had been very poor for several years; the teacher was popular because she took the pupils through the books very rapidly and gave high grades, regardless of whether the pupils did any work or not. Later, we succeeded in getting a real teacher for that district who did the best work ever done there, but she was very unpopular, and was thwarted in her efforts to bring about the much-needed reforms because the parents would not support her. It was a lack of co-operation through failure to understand or appreciate good work, preferring high marks or grades to good work and honest grades. This is only one example of many every county superintendent could give, but it shows that parents often are responsible for wrong practices in our schools and that their co-operation is absolutely essential to the correction of these faults.

Again, the material improvements of our schools, the finances for providing proper building and equipment and for securing well-qualified teachers, come directly from the patrons, and without this support our schools must fail. This matter of providing money, the matter of taxes, often is a very sensitive one and the point where it is often the most difficult to secure the necessary co-operation. We must have stronger support here. Salaries must increase in order to secure and hold well qualified teachers. Here the responsibility is directly and urgently upon the patrons. Many of our troubles and defects will be successfully met and overcome when the salaries become sufficient to command the services of better talent in the teaching profession.

I said that the teachers and school men are not responsible for all the faults of our system, but I would not have you understand that they are not responsible for much that needs improvement.

We as teachers are to blame for much and have a greater responsibility than many of us are aware or willing to assume. Sometimes I am not surprised that we do not have the interest and support of parents when we are doing so little that deserves their support.

If we expect the co-operation of parents we must make efforts and render service that merits support. Inefficient service on our part often is responsible for a lack of interest on the part of parents. We need a higher standard for teachers, better trained teachers. The Legislature should give us a minimum age limit of not less than twenty years. Children can not command the respect and support of the pupils or parents; neither can incompetent teachers, though they be as old as Methuselah. These are some of the causes for the absence often of co-operation. They are defects of our system which must be largely remedied from within. I have dwelt on them because to treat a malady successfully we must know its nature. To treat a state of indifference on the part of patrons we must understand and remove the cause. But aside from this we often find on the part of patrons a lack of interest, a state of lethargy from which they must be aroused before we can secure their co-operation. What will awaken them? Only one thing. That is to cause them to see how the proper training of their children is dependent upon their co-operation, how the success of our schools is so largely determined by the hearty and intelligent support of the patrons. The one way is through the child and the child's welfare. Some one has said, "Take a child by the hand and you take the mother by the heart." Interest the boys and girls, arouse their enthusiasm by better teaching, by the teacher coming in real touch with their lives, and you reach the patrons. If our work in the school room were real teaching in place of merely hearing recitations, if the child were more deeply interested by vitally relating the work to the child's life, there would spring up an enthusiasm among the children and spread to the parents all over this land that would, I believe, bring us the improvements needed.

We have a country district in Montgomery county where the board paid the teacher more than was paid to any grade or high school teacher in the county. In that district they voted more than the limit for school purposes and when I told them that the Constitution of the great State of Missouri safeguarded their boys and girls against too much education by limiting them to 65 cents, they said, "Then we will raise it by subscription." One man offered to give $25. Two or three in that district, when they paid their taxes, complained that their school tax was not high enough. This hearty co-operation came through the pupils because they had a fine teacher, a good school. We have other districts, however, that vote the limit of 65 cents or more and where we have splendid co-operation.

The county superintendent may use the county papers to reach the patrons and arouse interest. The teachers may have entertainments, get the patrons together at the schoolhouse and create interest. We hold about fifteen rural graduating exercises in the county each spring. These are well attended and interest is created by the program and by the talk of the county superintendent. During the year in connection with my visitation I hold night meetings all over the county at the schoolhouses, churches and halls. I use a stereopticon and illustrate and talk school improvement, education, etc. The lantern and pictures insure a good attendance and make more impressive that in which I wish to interest them. A few times the school board met immediately at the close of the meeting (having me to meet with them) and proceeded to provide for the improvements, I suggested in my talk.

I can not go into detail in discussing this night work, but I have secured some very gratifying results in the way of better interest and co-operation. This, however, is hard work; to work all day visiting schools and then work several hours at night consumes energy very fast, but it is worth while. It is an opportunity of doing great good, inspiring the boys and girls and arousing interest among the patrons. Sometimes the strain of the work is almost too great and I nearly give up, but when I think of what a great opportunity it affords, I feel like I must keep on and make use of it. The problem of getting in touch with the patrons is partly solved by the night meeting, but the territory is too great and meetings can not be held often enough, besides it works a man to death. To succeed with this work requires much energy, great faith, abundant love and enthusiasm.

Now, I have been rather general in my discussion and have not gone much into detail or given many specific examples of co-operation secured through the means suggested; but time would not permit me to do so. Do not understand that the methods mentioned never fail, or that a revolution can be brought about in a short time. I have many times been greatly discouraged because I failed to get the response or co-operation I felt my efforts deserved, while other times the response was most gratifying.

In conclusion I would say to teachers and superintendents: Have courage, have faith, have great love. Those will beget earnestness and enthusiasm that can not be resisted. It means sacrifice and the losing of your own life in your work, but it is a noble cause and you will find your life again in the larger and more complete lives of your boys and girls.

To patrons I would say in conclusion: Do not forget that the success or failure of our schools and our school system depends to a great extent on your attitude, your co-operation or lack of cooperation. Stand close by us, give us your friendly criticism and sympathy, your support and encouragement. Not for our good, but for the sake of your children or your neighbors' children; knowing this, that the success and future welfare of our children and of our country and nation depend on how well we co-operate in this great work of education.

SOME CHANGES NEEDED IN RURAL SCHOOLS.

(Geo. W. Reavis, State Rural School Inspector, Jefferson City.)

Quite frequently we hear the charge that with all the advancement that has been made in educational work throughout the country, the fact remains that our rural schools have not only been neglected and overlooked, but that they are only "marking time," and that in many cases they are in a far worse condition than they were forty or fifty years ago.

> "Still sits the schoolhouse by the road,
> A ragged beggar sunning;
> Around it still the sumachs grow,
> And blackberry vines are running."

Unlike the days of old when fifty or sixty strong boys and girls and young men and women were there to make things lively for the teacher, we see within only a dozen boys and girls and a young girl still in her 'teens with a very meager education and less professional training as a teacher.

While it is true that in many cases conditions are no better in the rural schools than they used to be, there are forces at work having for their object a revitalized and revolutionized country school, and with these proposed changes I am in hearty accord.

Some of these needed changes are as follows: Increasing the school funds, and improving the method of apportioning the same; close supervision; consolidating several small districts into one;

separating school officials from politics; decreasing the number of school directors in a county; the introduction of elementary agriculture and domestic science into the curriculum; a modern heating and ventilating plant in each room; a sanitary water supply, and a house arranged for carrying out the work in agriculture and manual arts. While we are agreed that many of these changes would prove beneficial, we are all agreed that in order to carry out these plans successfully we need an improvement in the teaching force and a more permanent tenure. It is folly to expect inefficient persons who are still in their 'teens and who have not learned to govern themselves to be leaders in the great work of revitalizing country life and country schools. We are in great need of persons of mature mind who are efficient leaders that are in sympathy with rural life and rural conditions and who are willing to devote their entire energies to the uplift of the rural school, the rural church, and the rural home. This is necessary to attract and hold our boys and girls on the farm.

I would rather my girl should learn to become a good home maker, to sew, sweep, dust, bake, wash the dishes—in short, be a good home maker—than to learn so much that she cannot use in this life that now is. For what shall it profit a man if he should gain a wife who could read all the Latin ever published, demonstrate all the propositions in Euclid, and yet lose his own good digestion, or what would a man give in exchange for a good home maker?

We need less about the geography of foreign lands and more about the composition of our own soil, and how to restore its fertility; less about cube root and annual interest, and more about how to feed and care for stock; less about the rivers of the world, and more about a pure water supply in our homes.

In order to carry out this plan we need a few rural schools established in every county, having in connection a small tract of land, on which would be found the home of the principal of the school. This farm should be a model experiment station in agriculture toward which farmers in the community could look and from which they could learn many valuable lessons.

The school room should be properly lighted and heated and provided with the necessary appliances for carrying out the work. The library should contain, in addition to the good literature and history, and science, all the free bulletins published by the Department of Agriculture in both our State and Nation. This would be an excellent source from which to draw material for essays and compositions in language and grammar work, and at the same time be learning the best methods of the various phases of farming.

The teacher of this school should be paid by the year for his services and the salary should be sufficient to attract a well-trained man who would devote his entire time to the school work of his district, and during vacations he could exemplify on the small farm the best methods, and work in connection with the farm adviser in stimulating an interest in better crop productions. The teacher should be elected for a period of three to five years and so long as he makes good he should feel secure in his place, as the banker, the doctor, the merchant or the lawyer, since the efficient teacher would render a service as valuable to the community as any of those named. When conditions require it an assistant should be provided to do part of the work and extend the course of study in such a way as to bring the school work, the home and community into closer relationship to the material improvement of each.

Not all rural schools should soon take on this new condition, but many should, and in order to carry out the plan more money and a higher rate of tax should be allowed. There is something wrong with our system of taxation when one rural school maintains an eight-months term on a levy of five or ten cents on the hundred dollars valuation while another is forced to pay sixty-five cents and then can support only a six or seven months school. I think we need a county unit for school taxation and then it would be possible to give each district a square deal in the matter of school advantages. This seems to me to be just and right.

We would sum up the needs of our rural schools as follows: First, in most cases more money; second, better teachers and better salaries with a more permanent tenure; third, larger school units and a small tract of land and house owned by the district and occupied by the teacher; fourth, a modern, well-lighted and ventilated building equipped with all the necessary appliances for successfully carrying out the work in agriculture, domestic science, and manual arts; fifth, a county unit of school taxation.

CONSERVATION ON THE MISSOURI FARM.

(Mrs. Mabel Miller, Osceola, Mo.)

Mrs. Miller.

Elbert Hubbard has told us that the two best elements of mankind are the tendencies to love and labor. We all agree with Mr. Hubbard, but would add that conservation means a great deal to us today and still more to the man of tomorrow. To be sure, love is the greatest part of man, but we can not love our fellow beings without in some way serving, and to serve is to labor and to labor is to work.

Work for mankind is every individual's duty, and most people's pleasure, as the busiest folks today are the happiest. The idler represents the miserable individual and a class of unrest. For proof that man loves his fellow beings we have but to look at the farmer. Why does he till the soil, why produce grain and live stock? Not merely because he loves the soil or produce, for he does not raise corn because he loves a crib of corn, or buy and raise stock because he loves live stock, although he may care for it in a way, as we all have our preference in lines of work. The man does not lose sleep, or leave his comfortable fireside to go down to the farrowing pens and work with the young pigs or lambs just because he loves them. But he loves life and he loves to help produce these things which have life. He labors, not only for his personal profit but for the good of humanity, because he loves his family, his neighbors, and the masses who must have food, shelter, and raiment. In this work is a huge degree of conservation.

The surgeon does not operate on the human body because he loves to cut and sew, but he performs operations and disinfects the wound, then proceeds to dress it. And why? Because he loves human life and wishes to conserve it. The stockman conserves the life of the brute, and hence builds a bank account for himself and family, and saves useful animals for the needs of humanity. And so it is from love and labor to conservation.

Conservation is the one great need of today, but tomorrow's generation will need the results of our conservation more than we need conservation at the present time.

All work done not for the good humanity is work done in vain. It is not so hard to earn or accumulate as it is to take care of things or to conserve them, that is, make them go as far as possible for our own and other's welfare. Conservation, I say, should be the watchword of every man and woman. I would like to see the word "conservation" placed on a pennant and the pennant fly from ocean to ocean and from pole to pole.

The human mind fails fully to conceive, and the pen lies helpless when the needs of Missouri soil are considered and when we attempt to write of these things. But what are we as farmers doing for Missouri soil? As good as it is, the fact is driven home to us that soil building and road building are Missouri's greatest needs. Farmers, conserve the soil. Breed and raise livestock, destroy the weeds as soon as they begin to grow. Practice deep and winter plowing, stop washes, tile your low land, rotate your crops, and fertilize, eternally fertilize.

Farmers should encourage conservation of Missouri streams in the way of building levees, erecting dams and installing drainage. Harness the rivers for power; eliminate overflows, and drain for reclamation.

We need more railways in Missouri. Many of the counties are as yet untouched by rail, and we can not completely conserve without railways. It takes capital to build a railway, but today the railway helps build the farmer. The freight rates may at times be appalling, but we had better pay the price than do without service. Inferior service excels none at all.

The lack of conservation in the live stock world is tremendous. Consequently we have high-priced food and much inferior meat. At the same time there is decreased production and increased population. This will be remedied in a few years, but all live stock producers will have to do their share in the work. This first step is the conservation of the heifer calf. In the corn-belt states a bill will soon be before the legislatures asking that this step be taken. Should this bill generally become a law it would go far toward checking the cattle shortage. Correct breeding and sanitary conditions will also aid in solving the cattle supply question. The more systematically and scientifically we breed, water and feed, the greater the conservation of our live stock. The horse world has found that a rusty nail will cause lockjaw, an infected tooth or bad feed, sickness and perhaps death. Therefore every known preventive or precaution is used to conserve the horse family.

Disease has swept out hundreds of herds—and many bank accounts—because conservation was neglected in the swine world. In many little ways conservation leads to wealth. Take, for instance, the crops from orchard and garden. We can, by merely canning and evaporating what our gardens grow produce enough food in summer to serve our tables throughout the year.

All the meat surplus from the farm might as well be cooked and canned or cured, all with very little expense and with work that is forgotten in the pleasure of doing it. Yet so many families sacrifice their farm products at low prices, and supply their tables with inferior food bought at high-priced rates. Then they insist that farming does not pay, that all the talked of profits are spent for food and machinery. All this time their machinery is rusting in the fields. Missouri lumber is too cheap, and stone and concrete too plentiful to neglect housing the products and machinery of the farm.

Conserve in the household. I am tired of seeing the good wife carry heavy buckets of water, when it has been demonstrated that any house can for $15 have a little water system of its own. We had better sell the scrub cow and install a tank and faucet with a drain pipe. The wife's health is worth more to the farmer than all else on the farm. With modern machinery, labor for man and woman is greatly reduced. Thus the natural life is prolonged. People should live longer. The average life today is ony 34 years, and men are at their best at from fifty to sixty-five years. We need more older people. We need their brains, their mature judgment born of long experience.

So I say, conserve human life, energy and love. It is for the American of today to conserve the home. It is not alone the low wage that impoverishes the bulk of the working class; it is the lack of knowledge of spending judiciously what they make a lack of conservation.

Farmers, take up the cry of conservation. Know, live and practice it. Then pass it on from man to man.

THE WOMAN ON THE FARM.

(Miss Pearle Mitchell, Columbia.)

Miss Mitchell.

I noticed when one of the speakers gave it as her opinion that young married people should stay at home and not "go gadding about," that all the men in the audience applauded. Again, when she said that a woman should give far more attention to the calico house dress and have fewer "dress-up" clothes the men still applauded more. Whereupon a lady near me said with doubtful expression, "One would suppose these husbands were very much abused, but I assure you they are not." I quite believe she was right, though my knowledge along this line has come from observation and theory, since I do not possess one of those household articles. However, this is merely by the way, for my talk has to do with the woman side of the question, which to me is more important.

It is my belief that much of the unrest and dissatisfaction among the women and young people in the country comes from lack of conveniences in the farm home and lack of social diversion. If a great deal of thought and planning and a small amount of money were expended in labor-saving devices in the house, the weary housekeeper's nerves and strength would not be so taxed. So simple a thing as a cupboard between dining room and kitchen doors on either side through which food and clean dishes could be passed, would save many steps, while a stool, which, when not in use, may be pushed under the kitchen table, on which the cook may sit while preparing vegetables, rests tired bodies. The oil cloth or linoleum on the kitchen floor is a wonderful saving of work, and to those of us who possess the fireless cooker it is an indispensable joy in the culinary department. The masculine portion of my audience knows what a bugbear stove wood is, and where was ever the man, though he proverbially "cannot do without dining," that ever submitted graciously to the demand for "stove wood," when he is rushing off to the plowing or reaping, when his wife frantically calls after him, "Oh, John, I have nothing to cook dinner with." "You must get some chips or cobs—or something, I can't stop," comes back from the distant John. You notice, too, that he said "you must get" the fuel. Don't you think this wife would have been justified in serving him as did a spirited woman I heard of, who prepared everything, set it on the fireless range and then attended to other duties until 12 o'clock. When her spouse arrived she pointed to the cold range and said, "My dear, I decided today to prove to you that this stove will not cook without fuel." So get a fireless cooker, provide an oil or gasoline stove and then defy your wives to give you bad dinners. Another comfort is a screened porch, which makes a pleasant summer dining room and sitting room. It costs little compared to the pleasure that it gives, and these things are not beyond the reach of the modest income.

The human animal is a social being which demands the companionship of its kind. Diversion is necessary to the physical, mental and moral welfare of humanity. Monotony dulls the intellect and makes sluggish the vital forces, and the tendency of the strenuous demands of farm tasks is to make "Jack a dull boy." Hence, there should be some form of social amusement to counteract this influence. Distances and lack of time prevent much interchange of visits, and the roads are often bad. We must, however, more and more centralize our divisions, making the school and church the focus, and combining our social interests and establishing a good fellowship and neighborly co-operation. Literary clubs fed by the traveling libraries, home economic clubs, where housewives can exchange experiences and solve domestic problems, and rural life clubs where the whole family finds a place. Let these clubs have annual or semiannual picnics or open meetings with all the good cheer country people so well understand, and where is "joy unconfined" and the relaxation may tide over many a weary day. I should not mind an occasional moving picture, provided it had the elevating tendency. Travel pictures always interest, even the ubiquitous tramp who steals yards of bologna sausage, which in turn trip up passerbys, who join the policeman in the chase of their victim who finally runs off in the automobile of a millionaire. It creates a laugh, relaxes muscles and brain and we know "a little nonsense now and then is relished by the wisest of men."

Let us hasten the day of good goods, the community school and church. The world has come to the rural dweller through the telephone and rural delivery and he gets out to the world by means of the automobile and interurban railway. There is no dress distinction, and no longer is "reuben" the butt of the city wit. The farmer is fast coming into his own and finding his rightful place among those who have achieved success.

REPORT OF SESSION DEVOTED TO THE COUNTRY NEWSPAPER.

INTRODUCTORY REMARKS BY H. F. CHILDERS.

(Mr. Childers, who acted as chairman of the Meeting, is Editor of The Troy Free Press and The Columbia Herald.)

H. F. Childers.

This conference has taken up some of the problems of rural life, and I am glad to see so many people here this afternoon when other questions of vital interest are to be discussed. I do not know whether you have taken the trouble to look through the program of the week on this subject, but one thing that attracted my attention when I first saw the program before it was submitted to the printer was that especially the three departments that are called upon to discuss this subject of rural life and the betterment of rural conditions are the church, the school and the country newspaper. Now, I do not know whether you gave the matter the same attention that I did, but it seems to me that comes mighty near comprehending the little world that we country people live in, and I speak as a country newspaper man. The church is a great factor, of course, in building up and ennobling and beautifying and making better our rural life, and the school has its place and the editor has his sphere. But, if you will pardon me for being perhaps just a little bit egotistical on that subject, it occurs to me that the country newspaper man is the practical preacher of the three; he certainly has the greatest opportunity. He addresses more people week by week than either the preacher or the teacher. His opportunities, I say, are greater, and if he does not take advantage of his opportunities, then he misses a great deal in life that he might otherwise make use of.

This afternoon the newspaper men of the country are going to talk to this gathering for a while on this subject of the betterment of our rural life. I know that you will enjoy what they have to say. I am acquainted with the gentlemen, I believe, who are here this afternoon to speak to you. I am acquainted with all of them and know them personally, know of their work and know of the positions they hold in the communities where they live, and it is a pleasure to me to be associated with them in newspaper life in a professional way.

The first speaker of the afternoon is President of the Missouri Press Association, whose home is at Fulton. I have known him for years. I honor him as a friend. I esteem him very highly as a professional brother and I am sure that you will all enjoy listening to what he has to say. I have the pleasure of introducing Mr. Ovid Bell of the Fulton Gazette, who will address you.

THE COUNTRY PAPER AND THE FARMER.

(Ovid Bell, President of Missouri Press Association and Editor The Fulton Gazette.)

Ovid Bell.

The country life problem, I think, will solve itself. I do not mean to say, however, that these conferences are not helpful to its solution, for I know as well as anyone could know that the results are always beneficial when thoughtful men gather together to consider a given problem; but I do mean to say that we in America always prove adequate to the emergencies and conditions which we have to meet, and that though we sometimes spend a long time on the road to a special reform, we ultimately arrive, and in consequence the tribes of men are made happier and the world becomes a better place in which to live. Therefore I say confidently that I believe that I will solve our country life problem, just as I believe we will solve the other great problems in our national life.

It is rather a departure, I should say, for the relation of the country newspaper and the farmer to be considered at a country life conference—or, for that matter, for the country newspaper to be considered at any conference. It is a regrettable fact that too many persons regard the country newspaper as a nuisance, if not actually a menace, and the editor a public malefactor—until it becomes desirable to suppress something which the public is entitled to know, when, on the instant and for the instant only, and then for reasons of policy, the newspaper becomes an exalted institution and the editor a man of vast importance. Hence, the utter novelty of the subject which I am to discuss is one of the reasons I am glad to be here.

Isolation is the greatest bane of country life. The fact that farming requires a man and his family to live more or less apart from other persons and deprives them of free social intercourse with those who are congenial is the most valid objection to the most important of all the occupations of men. Man is essentially a social animal. He was created that way. We are told in Genesis, "The Lord God said, it is not good that man should be alone; I will make him a helpmeet for him." It is the longing for social life and social activity which causes our country girls to go to town to work in homes, factories, stores and offices, and makes our farm boys leave honorable, healthy, dignified labor in God's out-of-doors to become cogs in the machines in the factories of our great cities.

We are overcoming the isolation, however; and that fact of itself encourages me to believe I can look through the dark glass now before us and see the time when farm work and farm living will be again what it was during the colonial period of our national life, when, as our Virginia forbears used to say, "most of the people who amount to anything live in the country." The automobile, the telephone, the parcel post, the daily mail and the newspaper are eliminating the isolation of farm life. Presently we shall have small farms, intensive agriculture, good roads and country high schools, and then, I take it, there will be no necessity for back-to-the-farm agitation.

The country newspaper is doing much of the pioneer work which must be done before this happy condition becomes an actuality; and knowing the spirit of the modern, progressive, sincere country newpspaper man, I feel I can tell you with absolute assurance that the country newspaper is going to be even a larger factor in rural life development. The country newspaper man is in elbow-to-elbow contact with the plain, substantial people of the country, and understands their moods, responds to their impulses, knows their needs, and though too often hated and too often distrusted, represents them in his newspaper more honestly and more effectively than any other agency. I am sure you will agree with me, therefore, when I say that the responsibility of the country newspaper in assisting to solve the country life problem is to be compared in greatness only with its opportunity to render service.

Now, a great many of us disagree as to what a country newspaper should contain. I suspect every farmer present thinks he could conduct any newspaper he reads a great deal better than the editor does. Doubtless all of us agree, though that the country newspaper ought to be the news vehicle—the mirror, as it were—of the community in which it is published; that is to say, it should give the news that is fit to print of both the town and country which it tries to serve. I think it ought to do more than this, but if it does this it will help to lift the isolation which shrouds farmer folks, thereby bringing them into closer touch with their neighbors and broadening their outlook on life. Accordingly the farmer and the country newspaper are brought into a very intimate relationship, and since the relationship is intimate, it should be inspired by sympathy and confidence.

You are aware, as I am aware, that there is much distrust in the world. Possibly, because I am the editor of a country newspaper and sometimes am forced into personal contact with it, I feel there is too much distrust of the purposes of newspapers and newspaper editors. Candor also compels me to say that there are country newspapers which deserve distrust, though that is not a reason why all country newspapers should be distrusted. The man who is able to select seed corn, or to judge of the beef-producing possibilities of a calf, ought to be able to discriminate between the newspaper which is entitled to respect and confidence, and the one which should be considered with suspicion. The newspaper which is entitled to respect and confidence is the one which makes an intelligent effort to get the news, prints the truth, rejects fake and disreputable advertising, does business on a business basis, and which is too strong and too fearless to be controlled by selfish interests, and too large to be the personal organ of its editor. Let me tell you, too, that you farmers, you who are a part of the reading public, are as much or more to blame for the existence of the wrong kind of newspapers as any other agency, for if you would withdraw your patronage from them they would cease to exist.

Now, let me tell you that the great majority of the country newspapers in Missouri are entitled to your respect, confidence and patronage. The great majority of them are published by men who have high purposes and who are animated by unselfish motives. Some of you may not know it, but it is true that the country newspaper business is respectable. More than that, most of the country newspapers of Missouri are conducted by men who could make a great deal more money with a great deal less labor if they were engaged in other work. I know of my own knowledge that the editor of a country newspaper in Missouri —an ordinary county-seat weekly at that—had an opportunity less than a month ago to go into work in St. Louis which possibly would have made him rich in a few years, and that he put it aside because he wanted to stay in the town in which he is living and continue the work which he is doing. I have no doubt the same thing has happened in the experience of many of the better-class newspaper editors of Missouri. I have told you this that you may know that the modern country newspaper editor is not an Ishmael, and that I might lay the foundation for the statement that the right kind of co-operation on the part of the farmers of Missouri with the newspapers of the State will benefit both, and at the same time measurably increase the well-being of the people and the wealth and importance of the State.

Co-operation between the farmer and the country newspaper will still further advance the live stock interests of Missouri and advancement of the live stock interests of the State is part of the country-life problem in this commonwealth. My friend, W. L. Nelson, who, besides being Assistant Secretary of the State Board of Agriculture, is one of the editors of the Bunceton Eagle—the best country newspaper in this country, size of the town in which it is published considered. This newspaper has done much to encourage the breeding of pure-bred stock in Cooper county, and to the Nelson Brothers and their work, I am sure, is due much of the fame of Cooper county Shorthorns. Every saddle-horse man in the country knows that Mexico is one of the greatest saddle-horse markets in the world, though not all of them know that Rex McDonald and most of the other A-grade horses which have been sold at Mexico were foaled on the rich pastures of the northern part of Callaway county. The reputation which Mexico has as a horse market was obtained through the publicity work of the Mexico Ledger, edited by Robert Morgan White and his son, Mitchell White, and the Mexico Intelligencer, edited by Rufus Jackson. Paris, in Monroe county, is getting a national reputation as a place where saddle horses are trained, due to the fact that the town has two of the best country newspaper men in the State in Jack Blanton of the Monroe County Appeal, and Thomas V. Bodine of the Paris Mercury, both of whom are doing splendid work in encouraging the live stock industry of Missouri. My own county of Callaway is acknowledged to be the banner mule county of the universe, and the fame which it has gained in this particular is due in part at least to the work which was begun on a Fulton newspaper ten years ago by one of the first farm and stock news reporters ever employed on a country newspaper, and which has been kept up by his successors on the same newspaper. Numerous other country newspapers in Missouri have real farm and stock news departments—among them nearly all of the newspapers in Boone county—and the day is not far distant, I predict, when every live, progressive country newspaper in the State will be eager to get and publish farm and stock news.

Publicity is one of the greatest forces in the world, and properly utilized, it will help mightily in solving the country-life problem. Why, a few years ago the Bunceton Eagle started a movement to name the farms of Cooper county, and now that county probably has more named farms than any county in the United States. The movement is spreading to adjoining counties, and in a few years, no doubt, the majority of the farms in Missouri will have names. I believe farm conditions in Callaway county have improved since the newspaper of which I am editor established its farm and stock news department. I believe one of the results of the development of that department is greater pride on the part of the farmers of the county in their farming methods. If this is true, it is worth the work that has been done and the money that has been spent on the Fulton Gazette, even though there have been many discouragements to face and many obstacles to overcome.

Sixty and seventy years ago the country newspapers devoted their pages almost exclusively to politics. Then there came a time when those news matters which obtruded themselves on the editor received slight notice, while in later years the country newspapers have been devoted largely to the publication of local news. Fifteen years ago local news consisted principally of reports of the affairs of town people, country people and country affairs being neglected, due partly to a lack of satisfactory news-gathering facilities, partly to the indifference of country people, and partly to the lack of appreciation of country life and country people. The telephone and rural mail delivery have brought town and country closer together, and with the country newspapers endeavoring to get country news, the time ought not to be far distant when the only differences between town and country will be in the closeness of the houses and the kind of work the people do—when there will be sympathy and understanding and unity of purpose between the citizens of our towns and the citizens of our farms.

Just now there is a new movement in Missouri for better roads—and I may say in passing that the country-life problem in Missouri will not be solved until the principal highways in every county of the State are graded and macadamized. This new movement for better roads owes its origin to the knowledge on the part of some of the people that bad roads are doing more than everything else to impede the progress of Missouri. Do you realize that that knowledge was brought to the people through the medium of the country press? Do you know, too, that but for the country newspapers' knowledge of the King road drag would never have reached the people who should know about it? Do you know, in fact, that practically every country newspaper in Missouri is a year-in-and-year-out advocate of better country roads, and that in many of the newspaper offices of the State clippings, news articles and editorials on the subject of good roads are kept ready for use in dull weeks? I do not know how long this has been going on, but it began before I went into a country printing office as an apprentice nearly twenty-six years ago. Do you wonder that sentiment for good roads in Missouri is growing; that cross-state highways are being planned, and that special road districts are voting the maximum amount of bonds they can issue for the purpose of building permanent roads? I tell you that the country newspapers of Missouri did practically all of the pioneer work in the good-roads movement, and today are carrying the greater part of the burden of the movement. I verily believe, too, if they should suddenly agree not to mention the subject again, the movement would die in sixty days.

I ask you now, what thanks have the country newspapers received for this work? And I will answer my own question—practically none. Why, do you know that less than a dozen years ago farmers in a Central Missouri county organized a boycott against a newspaper which proposed that the county should issue bonds and build roads? In my own experience I have been roundly abused by farmers living a long distance from town because my newspaper urged them to drag the roads. I was doing something, too, that meant nothing to me, except the indirect benefit which would come through having the community benefited, while I was urging them to do something that would benefit them directly by making their roads better and thereby enabling them to haul larger loads to market and at the same time save wear and tear on their horses and wagons. I have no doubt the other newspaper men here have had similar experiences. I am not seeking to magnify the troubles of the country editor, but I tell you in all seriousness that after having a few such experiences the temptation is almost irresistible to surrender some of the things for which I have stood and to determine on a policy of following the line of least resistance; of telling the people what they want to know and saying only the things which will not offend them rather than telling them what they ought to know and insisting that they realize their opportunities and meet their responsibilities.

What has been done in the way of promoting the good roads movement is being done now for better rural schools. Practically every newspaper in Missouri is an advocate of rural high schools, and though present conditions are not superlatively encouraging, I have no doubt that the work of the educators who are behind the movement, and the co-operation of the farmers and the country newspapers, will ultimately fructify in an educational system in Missouri which will be commensurate with the State's resources and possibilities. The tax question, likewise, is related to this problem we have been discussing. Undoubtedly the Missouri system of taxation is the worst ever devised by rational men. It is unfair and unjust, and it imposes on the persons least able to bear it the greatest burden of supporting the government. Personally, I see no hope for remedying our tax evils in any other way than through a State constitutional convention, and I am glad to say that by far the larger part of the country newspapers of Missouri favor such a convention; and also that the probabilities are it will be held within the next few years.

I might continue indefinitely and show to still greater advantage the work that has been and is being done by the country newspapers of Missouri to make country life more attractive, and also show you how you can benefit yourselves and the communities in which you live by helping the country newspapers in gathering and publishing country news. But it is not necessary. You who are progressive enough to come to the seat of the State's College of Agriculture to spend a week listening to lectures by experts in their own line of work will perceive the underlying, animating thought in this address—that is, that country newspaper work involves earnest, thoughtful labor, and that it can be turned to your advantage if you will co-operate with the men who are engaged in it. I have aimed only to make you think—and if I have, I have done you, as well as my profession, some service. I thank you.

ADDRESS OF C. L. HOBART.

(Mr. Hobart is Editor of The Holden (Mo.) Progress.)

This is one part of the great practical program of Farmers' Week that is pure theory and opinion. The average country editor has a policy in regard to his farmer customers which he opines is right, but he does not know whether his policy is the best, or even a good one. Another editor pursues a policy vastly different, yet each man claims he is right, asserting that results justify his belief. Here are my theories and opinions and my reasons for thinking they are correct.

C. L. Hobart.

First of all, the question must be settled, what is the mission of the newspaper? And I answer it according to my theory: Primarily to publish the news, to chronicle the facts. I take issue with the majority of the profession in the matter of editorial opinions. I claim they are not worth the paper on which they are written. One instance proves this to my own satisfaction. Two years ago the mill-tax amendment was before the people of Missouri. Certainly nothing could be said against that; surely not, after going over this magnificent plant of ours, the greatest University in the West. The only question should have been the size of the majority in favor. The press of the State stood practically a unit for the amendment. Columns upon columns of argument, sent out by the State schools and by that splendid body, the alumni of the University, were printed in addition to the personal adjurations of the editors. What happened? The people rose and swatted that meritorious amendment with the same spirit that they manifested toward the prohibitory amendment, which amendment, by the way, was sincerely and enthusiastically supported by three-fourths of the papers of the State. Don't misunderstand me. I assert positively that the press has a power, the mightiest in the community, but it lies in its legitimate field—the publication of facts, the cold hard facts, the facts that hurt sometimes, but are necessary for the public good. For instance, a country paper may editorialize, utter thundering phillipics against the violations of the law concerning the disposal of cholera hogs, but it will not have one-millionth the effect that the publication of a six-line item giving the name of the farmer convicted of violating the law, especially if he happens to be a man of prominence in his community. It has long been a conceded fact that publicity is the great remedy for most of the diseases of our moral life, and the country paper has the same opportunity in its limited field as has its big brother in the large city. But publicity, especially in the case of the country paper, often means the loss of subscribers, advertising and job printing, with perhaps an occasional threshing. I know, I've been there.

Then comes the question, what is news? What items shall be chronicled for the interest of our farmer customers? Not easy to answer. Neither is the question, what is not news? The page known as country correspondence is not a complete answer, for in this mass of items in the ideal country newspaper, there is much chaff, much stuff that has no more right to be in type than the nauseating piffle that crowds the society columns of the metropolitan paper. But on the whole, country correspondence serves a great purpose, nothing more or less than fostering community interest, without which life would be barren indeed. "Look not every man on his own things, but also on the things of others" applies in the rural community more than any other place on earth. The correspondence page contains scores of little happenings, not of surpassing interest, it is true, but they are the lights and shadows of life's great picture, not buried in a great art gallery in the distant city but spread out before our gaze every day. This interest in the little, common every-day things of our neighbors may not be necessary for the growing of the best hogs or the most corn, but hogs and corn are not all there is to life. The correspondence page offers a great opportunity for the building of community interest, and the ideal newspaper overlooks no items of community movements. And these things are many, lectures, church and school entertainments, box suppers, debating societies, corn and colt shows and lodge gatherings. Social events, properly reported, serve to stimulate interest in rural life, and aid in the "back-to-the-farm" movement. Then there is a field of individual items that the country editors should industriously till. Quite often an item like this appears: "Tom Jones shipped a load of cattle to the city Tuesday." A good item, real news, but is that all? Of course the first question is, what did he get for them? Also good, but is that all? Where and when did he get them? What did he pay for them and what did they weigh then? What did he feed them? What was the gain per day? Did he feed the same ration? Did he use a ration tried at the college experiment station, or did he find a better one? Did he encounter any problems that may affect his doing the same thing again? That six-line item may be expanded into sixty, every word fraught with deep interest to every farmer in that vicinity. The good that may come from such an item may not be calculated either in cash or in the stimulation of a desire for better farm methods. Was Tom's success due to a ration recommended by the college experiment station? Then the publication of that fact will do 100 times as much good for the college as a two-column editorial on "Sending the boys to Columbia." Every achievement of the farmer, every time he leaves the beaten path, every attempt at improvement, whether a modern home, the purchase of pure-blooded stock, phenomenal yields, the result of scientific methods, should be fully "covered" by the country paper. And let me emphasize, the plain facts will do more good than ten times the advice along those lines. It is simply a matter of human nature. Neither you nor I will take advice—we don't need to, you know—but if you will show us something good that has been done, we will slip around quietly and investigate and then gradually, just to show you we will not be influenced by you, we will adopt it ourselves.

To measure up to his field, the country editor must keep abreast of the march of things agricultural. He must be a reader of the leading agricultural papers and keep posted on the achievements of the colleges and experiment stations. Otherwise he is liable to write an item like this: "Bill Smith, true to his investigating turn of mind, is trying an experiment in feeding a bunch of stock. He does not feed all corn, but adds cottonseed meal and clover hay in certain proportions. This is called a balanced ration and is something entirely new." Or in speaking of late discoveries, he may include cowpeas as a soil builder. He may not go as far as one opinionated brother who wrote: "We don't think much of this high-falutin' book idea of rotation of crops, but we do think that corn ought to follow wheat sometimes."

The editor who would be of benefit to his farming constituency must have an intelligent acquaintance with the great movements that are revolutionizing the world. Probably no business today is surrounded by more perplexing problems than farming. The great economic movement which has brought a frightful disparity between the consumer and the producer gives promise of serious results. I am no prophet, but I can see, in the next few years, at least, nothing but an increase in the proportion of consumers to producers. This, with its collateral problems, places still greater responsibilities on the farmer. There must be farmers or the world will starve. The farmer must stay on the farm. The farmer, in order to meet these increased responsibilities must be surrounded by the greatest and best influences of our civilization. He cannot have them with antiquated and inefficient schools, with meager community advantages, with a dearth of the influences that give a vision to the man that solves a world problem. The farmer is becoming more and more a business man, yea, more, a professional man. Three years' work confers the title "Doctor" on a high school graduate. Three years will not give the farmer—the professional man I take him to be—all the science he needs for his equipment. More than that, he must be a student of markets, political conditions and world movements.

The clientele of the newspaper of the future will be men of this type, a clientele, to properly serve which will demand a thorough understanding of its life and problems. Perhaps this is far-fetched, but I do not think so. Lowell said, "All thoughts that mold the age begin deep down within the primitive mind." No great problem is solved without the "movement of the mass." The country newspaper can be a great factor in the problem, not as a teacher, but as a disseminator. Through its faithful record of the news encouragement will be gleaned from the successes, while the failures reveal the pitfalls that may be avoided in future. With its columns always open to the discussion of the everyday vital problems of its own field, the people may be brought to a clearer understanding of them. The country editor must have a profound admiration for the profession of farming. Otherwise, every item may have but one object, to coax the dollar from the farmer's pocket. Compliments, often not deserved, will be sown broadcast, and in the end will reap a "harvest of barren regrets."

Both the deserving and the undeserving will despise him, for both will see the ulterior motive. And that which should be a power for good, for encouragement, for upholding right standards, will be but the flimsy paraphernalia of the traveling mountebank.

ADDRESS OF L. M. WHITE.

(Mr. White is one of the Editors of the Mexico (Mo.) Ledger.)

L. M. White.

Mr. Hobart's remarks concerning the editor that does not know anything about agriculture recalls to me my experience shortly after I left a metropolitan paper to come back to Mexico to assist my father. I was very much enthused about the farm news column, and in an endeavor to improve it, sent out some post cards, and these were mailed out to the various farmers in different parts of the county at different seasons to learn the status of the crops, what the yield was, what was the acreage, etc. I remember I came home in the fall of the year, and on the first card—I think sent some time in November—was a question as to how much oats had been planted that fall. I certainly heard from that. I remember that very well. I have learned since, and I think that all the newspaper men of Missouri, especially those that have not had the opportunity to learn more about agriculture, ought to come to Columbia and take at least this week and get the benefits of this short course. Of course, the country newspaper itself is like any other newspaper, and I believe that the co-operation which the speakers at the meeting have urged, would have been possible sooner had it not been that a great many country newspapers, being run for political or personal purposes, have maliciously colored the news to suit themselves. If we allow our personal opinion to dominate, the public service the paper is capable of is absolutely lost.

I might cite a case, if you will pardon my entering into personality. In the past advertising, as it has been done by the patent medicine people and in the early days by the circuses, was, in part, just one big fake story, and after you investigated any of these propositions you found that a lot of it was what we are pleased to call "bunk." The advertising men of today have gone forward and are putting advertising on an honest basis. They are fighting for that. And along that line a lot of newspaper men are trying to impress the idea on their readers' minds that advertising is honest, that the merchant cannot afford to advertise dishonestly, that if he does his publicity is lost, and I think that same policy should be followed along other lines. It puts our profession on a higher plane and makes us stronger with the people.

There are two things that are very gratifying to me along that line of public service which I believe are of greater benefit to the newspaper, and naturally it follows of greater benefit to the people, and that is the teaching of journalism at the University of Missouri, teaching it to agricultural students. That means that a farmer can sit down and tell you of his experiments last year, perhaps, with oats, in which he had imported some new seed, or whatever it was. He can write that story and give it to the paper and tell the story in a terse style, yet leaving out no important details, and his neighbors will get the benefit of it; whereas, if he makes an experiment and says nothing about it he is doing an injustice to his neighbors and himself. I find that farmers are more than willing to give us items, especially farmers who have been experimenting and who have met with success, or where they have failed, in order to keep their neighbors informed. And I want to say that if every farmer would enter into the spirit of co-operation as much as he will be met by the newspaper men, wonders will be accomplished. There is no question about that, because newspaper men of the country are more than glad to give stock and farm news space, and it will be vastly better, because that means more prosperity and better conditions, more reading for the public, and naturally when the newspapers have more influence and have better service the editors feel that their efforts have not been in vain.

The Ledger has just closed a six months' campaign in Audrain county for a farm adviser. Like some of the other speakers who have spoken about the way advanced agriculture was received, we were laughed at by a great many, but the majority of farmers are taking hold of it, and not only the farmers are going to get the benefit of this, but every citizen is going to learn something about agriculture, about furthering the interest of Audrain county. The Mexico Commercial Club is in for making Audrain county a greater agricultural community. I think, with the newspapers taking up these improvements and educating the people and keeping such before them so they will take notice, that in the end everybody will come to these advanced ideas of conditions of life and we will have achieved a wonderful success in public service.

ADDRESS OF HON. DOC BRYDON.

(Mr. Brydon is Editor of the Essex (Mo.) Leader and a Member of the Missouri Legislature.)

Hon. Doc. Brydon.

It is rather unexpected to me that I should be called upon to take part in this program so quickly after I arrived in the hall. I had hardly gotten into the spirit of the meeting. I received some days ago an invitation from the Assistant Secretary of the Board of Agriculture to appear before this conference and discuss some of the relationships of the country newspaper with the farming interests of the State of Missouri. I accepted that invitation, but since that time have been very busy with the duties devolving upon me as a legislator, and I have not had an opportunity to prepare a set speech for this occasion.

As I understand, and understood from the letter, it is only extemporaneous talks that are desired, and I want to say to you in the beginning that you are not going to be burdened for any great length of time by the things I am going to say. In fact, my fellow citizens, I feel this afternoon as did the young minister who was traveling in a strange country and stopped over Sunday in a hospitable home—except that I am not a young minister and neither am I entirely among strangers. They learned that he was a minister and invited him to go to church and preach to them. He accepted the invitation, and Sunday morning at 11 o'clock he preached as best he could. After the sermon was finished the people lingered about the house, as hospitable country people do, shaking hands with one another and commenting upon the sermon. Finally somebody approached an old grandmother in the congregation and asked, "Grandmother, how did you like the sermon this morning?" And the old lady said, "There were just three things about it I liked fine. In the first place, it was short; I liked that part splendidly. They didn't take up any collection in the second place; I liked that; and in the third place, he didn't leave any other appointment. I liked that the best of all." I do not expect to take up any collection; my address will be short, and if there are any other appointments published, I have not been informed of it, so I am sure these three parts of this talk you will like splendidly.

Referring to the relation of the country newspaper with the farming interests of Missouri, it seems to me there are no two classes of citizenship that are more closely related than are the farmers and the men who publish the country newspapers in this State, each striving in his own way to build up the fortunes of the community and the interest of his country. There are many things that could be said this afternoon, but I understand that our talks here are to be limited to about ten minutes each; hence, I shall not enter into any lengthy discussion of this question. I want to call your attention to some things that the country newspapers are doing, and will continue to do, to advance the agricultural interests of this State. There is another and great institution in the State of Missouri that is closely related to these two institutions which I have just mentioned, and that is the public school system. The country newspaper, the farmer and the public schools are what are largely today putting Missouri on the map.

The country newspaper can assist greatly in the work of the public school and assist the farming interests of the country and aid in the movement that is now taking hold of the country known as the "back-to-the-farm" movement. You will pardon me if I deviate from the subject under discussion, but refer to some of the conditions that prevailed in the public schools of this country even as late as the time when I was in school. I remember that the first day I ever entered the public schools of Missouri to begin to lay the foundation for the limited education that I was to acquire; that day I began to be educated away from the farm. The idea that was instilled into my head was to go to school now and acquire a little learning and make a second or third grade certificate and teach school awhile and then get away from the farm and into some of the professions and move to town. That, I believe, is the cause of a great many going away from the farms of this country and is the cause of the influx of population into the commercial centers. I believe that there is no movement more deserving of the attention of the people of this State than the movement to keep the boys and the girls on the farms of Missouri, and the newspapers of my section are aiding and assisting in that movement, and we have done it by encouraging the teaching of agriculture in the public schools of the State. I remember when that was first instituted in my section of the State; there were a lot of mighty good men who looked upon it with indifference and others who absolutely opposed the introduction of elementary agriculture in the public schools, but today they have seen the wisdom of it. They inquired, "Why should you teach my boy the elements of agriculture when he has grown up here on the farm and has learned about all there is to know about it?" There were so many reasons for the teaching of agriculture in the public schools and we have been impressing upon our people as best we could in our own way the importance of such an education.

There was a girl who had grown to young womanhood in one of the great commercial centers of this country. She had never been out on the farm in all her life, and after she was grown she went down to visit a relative on a great plantation in the South. After she had arrived there and came out to the dinner table they passed her a fine dish of rich yellow country butter, and she said, "Why, do you keep a cow down here?" Now, there was nothing particularly bright or interesting in that remark, but before the dinner was finished they passed a dish of fine rich honey, and she said, "Law me, you keep a bee, too, don't you?" It was not the girl's fault; it was the system of education that prevailed in our schools. Now, that is one instance that occurred in the State. I have been told that in a certain county in Missouri, just a few years ago, a young lady, who was born on the farm and raised up amid agricultural surroundings, was being examined for a teacher's certificate, and among other questions propounded to her was to give five reasons why a good dairy cow should be kept on the farm, and one of the reasons she gave was that "We would not have to live on condensed milk, which is made from milkweed."

Then I heard of a lawyer who had lived all of his life in a large city in one of the great states of the country. Close application to business had undermined his health and he went west to seek health out upon one of the ranches of that country. When he went into the home of the ranch owner he said to the lady of the house, "Now, I have come out here to seek my health; I want to forget business and everything that I left behind; I want to be one of you; I want to learn your ways and how to do things as you do; and when you have anything to be done call on me just the same as the other folks about the house." One day she said, "All right, I will just send you down in the pasture to milk the cow." He said he would go, though he had never done anything like that in his life; so he went down in the pasture, with a stool in one hand and a milk pail in the other, to milk the cow. It was a long time after he left the house and he had not returned with the milk and the lady became uneasy. She waited awhile longer and he did not come, so she sent one of the boys down in the pasture to see what was the matter. The boy went down and found the lawyer following the cow from place to place, and he asked, "Haven't you got that cow milked yet?" The lawyer replied, "No, sir; I can't get the old fool to sit down on this stool to give me a chance."

Every boy and girl should be taught that agriculture is one of the most important callings that any man or woman can enter into, and that is one of the things that I, in my humble position as country editor, am trying to instill in the minds of the readers of my paper. Not only that, but I believe if you take the country newspapers of Missouri, 95 per cent of them will usually be found right upon the moral questions affecting the State of Missouri. They are usually manned by men who have come from the farm. They are manned by men who have at heart the interests of the great State of Missouri and the coming generation.

My fellow Missourians, I believe that the farmers, newspaper men and the educators of this State can co-operate in a way that will redound to the honor and glory of Missouri.

I am glad, indeed, that I have had this opportunity of addressing this distinguished conference. My fellow citizens, if there is one thing about which I am greatly concerned at all times it is for the growth and prosperity of this great State of ours. I say to you if there is any time or any place where I can lift my voice or use my pen to aid in the betterment of the industrial or agricultural interest of this State, I am willing and ready to do whatsoever I can. I say to you that our interests are one, and the relationship of the newspaper men, the farmer and the school men should be most pleasant as they travel hand in hand down the highway of life. They have the public for an audience, and are speaking fifty-two weeks in every year to that audience, and wield an influence that is felt, either for good or bad; and I have referred, my fellow citizens, to the influences that I feel the great majority of them have been trying in their humble way to wield for good. We have never had ambitions to sit among the high and lofty.

I referred in the beginning of this address to the fact that when we started to school our ambitions were set high, and I remember the first day that I entered school a very good old man in that district addressed us on the first morning in school, and urged us to work up and build up. He said he might be talking to the future President of the United States. That raised my ambition greatly. I thought maybe that was me that he was talking to. As I grew older I learned that we just elected one president every four years, sometimes they served eight years, and some wanted to serve more, and I became convinced that it was useless for me to wait and wish to ever become President of the United States, and then I thought that maybe sometime I might be Speaker of the House, but after I got married I soon found who was the speaker of the house.

Again I say to you that I thank you for this opportunity, and to say to you that my whole interest is to upbuild every institution or industry in this State, and the one big interest is our agricultural interest. Our great undeveloped section from which I come is now attracting the attention of men from every state in the Union and almost every civilized nation on the globe. We expect in a few years to develop down there a country that will be as rich as the famous Valley of the Nile. We invite men from all places to come and help us to make good citizens of Missouri, and if meetings of this kind can be held in every section of this State it will redound to the future greatness and glory of Missouri.

ADDRESS OF C. L. OVERALL.

(Mr. Overall is Editor of The Campbell (Mo.) Citizen and a Member of the Missouri Legislature.)

Hon. C. L. Overall.

I am sorry that my friend and colleague, Mr. Brydon, who has just preceded me, made an excuse to you this afternoon for being unprepared. Excuses become montonous when repeated by several of the speakers who arise when they are called upon, and I had the finest excuse you ever heard of for being unprepared, but will withhold it now. But I want to say this: I can prove my devotion to agricultural interests and my appreciation of the invitation that was sent to me by the Assistant Secretary, Mr. Nelson, by stating to you that I got up from a sick bed and came here with a burning high fever, from which I am now suffering.

On my way to Jefferson City about fourteen day ago, coming to the Legislature, I felt I was just about the biggest something in this country; I felt very great honors upon my shoulders, but if we have fourteen days more of the strenuous life we have been living down there, I think I will go back home and tell my people I do not exactly like the treatment and apply for a different job. When we reached Jefferson City I said: "Wife, we are now out of the so-called 'swamp east' Missouri; we are here among the majestic hills which for centuries have overlooked the turbid waters of the Missouri, where the health-giving ozone of the clean, white bluffs of Callaway county permeates the air. Certainly the 'malarie' will disappear as if by magic here in this beautiful City of Jefferson," but a few days after I arrived and had spent several nights in an overheated room (I am used to a fireplace), I got an awful cold, and last night began to shake and said, "Wife, I've got a chill. Call up a drug store and get about four dozen No. 0 capsules of quinine."

The medicine helped. Still I am not well, but I wanted to come to this institution. I wanted to see the place where we send so many of our young men and young women to be educated in the very highest degree. I have a brother-in-law here in the agricultural department, and about four or five young friends distributed around over this institution, and I certainly feel more than a passing interest on their account.

The program says that I am to talk ten minutes upon the subject, "The Country Paper and the Farmer." I have had seventeen years experience in a country printing office, and believe that I have some few thoughts and original views which might be of interest to you this afternoon. One suggestion I wish to make to the farmers and newspaper men: I have discovered that competition among farmers and the wives of farmers is a good thing to raise the standard of farm products. I live in Dunklin county (right next to Arkansas—and that is the worst thing you can say of us). It was once referred to as "swamp east" Missouri, and they say we are web-footed down there. This is not true. We have some of the finest land in the State of Missouri, and are proud of it and like to tell about it, and you will please pardon me for referring to the fact, but I want you to know about it. Down there we did have a low standard of products; for instance, our corn, cotton, wheat, and even the articles manufactured by the women, with the aid of the domestic animal, butter and milk. Some years ago I conceived the plan of asking some of the farmers of my county to give a short, accurate statement of their annual receipts and give us ideas about their farms and what they were doing, and I would publish it, that it might be of interest and benefit to others to see what they were doing. I published about six or eight of these statements the first year, and the first thing I knew I was pleased to see that some of the farmers would come in and say: "Let me see such and such a manuscript." I could see that they were interested, so would show the statement to them and prove the published reports. The next year Mr. Brown would try to beat John Jones or Bill Smith, and so the Browns, Jones and Smiths raised the standard of their products, each by trying to excel the other.

Now, I hardly know what to say further along that line, because the subject-matter has been covered by Mr. Brydon, and the chairman, Mr. Childers, and as I am the younger, I do not believe it would be just right for me to attempt to tell them or you how to conduct a farm or a farm paper. But I certainly appreciate the opportunity of being permitted this afternoon to meet you—the leading farmers and editors of the State.

I appreciate your attention and thank you for indulging me in these remarks.

REMARKS BY SENATOR CHAS. F. CARTER.

(Mr. Carter, whose Home is in Clark County, is a Member of the Missouri Senate, Representing the Twelfth District.)

Senator Carter.

I came in to learn and listen this afternoon. I did not suppose anybody would disturb me in the audience, but I see Mr. Nelson is present and has invited me up here for a talk before you good people.

I am glad that it has been my privilege to be interested in school legislation. This State, I believe, in the Forty-sixth General Assembly, passed more good school bills than had been passed in a quarter of a century. You will pardon me if I tell you I feel somewhat gratified for the part I played in the passing of those bills. And I have hoped that the present session—the Forty-seventh Assembly—will take up and pass even a larger number of good educational measures. Just last evening I was called to the State Superintendent's office for a conference with some of the leading educators of the State. I found present at that conference such men as Dr. Kirk, President of the Kirksville Normal, Dean Phillips of Warrensburg Normal, and representatives of this University, together with other men of that calibre. I am pleased to report to you we worked there all evening and away into the night, trying to draft some good school measures. One of the measures that was under discussion, and I believe it was the request of the conference that I should take it up and try to get it through, was a measure that has been referred to in this meeting. I am sorry I missed the speech of Mr. Brydon, who I believe was on the program, because I was a little late. He is picked out to introduce one of our school bills and we feel that with his energy and his ability it will soon be upon the statute books in this State. This is a bill that would give certain aid to graduates of high schools and then permit those graduates to be licensed to teach. For twenty years the normal schools and university leaders have fought that proposition, but last night all were unanimous, saying this was the time we should put forward that measure and all our high schools that are worth while receive State aid.

Another bill is to aid weak high schools. My friends, there are nine counties in this State that have no kind or form of high school whatever, not even a two-year high school or any kind. It does seem to me that this State as a whole ought to wake up and reach out to those counties and say, "Here is money; we are going to help you if you live up to certain conditions." This Legislature, I believe, will pass that measure also.

And then we are going to have a bill to give aid to and encourage the consolidation of the country districts, to give aid to these districts under every condition, and I will probably have the honor of handling that bill.

We will have a fourth bill that will just take the red tape and the conditions off of your present aid to country schools. You have laws now upon the statute books to that effect, but there is so much of red tape and detail that the benefits are probably all lost.

Now, the question is how to get the money for all these things. Gentlemen, I am glad that a good number of you are from the corners of the State. I would like to say this to the heads of the University and the men who are expecting appropriations out of the Legislature. I feel that at this time in our school movement when it will pay you in the long run, the University leaders and the normal leaders, and all other men who are asking for appropriations of the State Legislature, to be patient and not too exacting of the appropriations committee. Let those State aid school bills be cared for by appropriation before you ask too much of it. I believe that is the better proposition, to let some money go to those secondary schools that are unfortunate and cannot help themselves. I make that as a suggestion. I believe, and I am glad, that the schools—the country schools, the University, the normal—are today more in harmony than ever before. I am glad that our newspaper men are so willing to interest themselves and take part in these public enterprises, not living just for the advantage they can receive by putting forward their own particular purpose, but they are trying to reach out and broaden themselves and do a great public service along any line whereby they can lift the whole community. I am glad we are living in such an age. I am glad that I will have some part in the new movement to make Missouri better, to better her schools, to better her institutions all along the line. For my part, I think that when the record of the Forty-seventh Missouri Assembly is written all of you good men will say we did the very best we could with the means at hand.

REPORT OF SESSION DEVOTED TO DISCUSSION OF THE COUNTRY TOWN.

THE COMMERCIAL CLUB AND THE FARMER.

(Hon. M. V. Carroll, Sedalia.)

Hon. M. V. Carroll.

I have not had an opportunity to attend any of your sessions heretofore and have not really gotten into the drift of the work that this particular part of the Farmers' Week aspires to do. This is the first session that I have attended. I got my cue, to some extent, from what Mr. Hirth said in his speech, but I believe that I am expected to consider what is before this meeting this afternoon from the town standpoint, inasmuch as I cannot claim to be a farmer. I was very much impressed with the statements that Mr. Hirth made in his speech, and in the main he stated the facts so fully that there was no chance of reiteration and nothing to be gained by it.

One thought occurred to me while listening to Mr. Hirth's speech in reference to the interest the business men have in farming and farm life and agriculture generally; we have to admit that our motives in all of our actions and affairs are selfish to a certain extent. I undertake to say that a great many of the more than a thousand people I am told registered at headquarters, each and every one of them who came over here, if they were asked why they came here would tell you they had a selfish motive in coming. They did not pick this particular period of the year or this particular locality for a social outing. They came over for a selfish purpose, to get information which they could utilize for their material benefit. That is what I came over here for. I am not so philanthropic or patriotic, but that is the size of the situation. I came here to get information to enable me, if possible, to do better work in a better way than I am doing it now.

Not being a farmer, I am placed in a sort of peculiar attitude. When our Bureau of Agriculture organized over in Pettis county (for some reason or other they got into the habit of putting every secretaryship that doesn't pay any salary onto my shoulders, whenever it comes along, and they followed it up and made me Secretary of the Bureau of Agriculture), I had to get out and work and we have been very busy. I have been compelled to do a lot of work. My sympathies have been with agriculture. About two years ago I was in the same employment that Mr. Hirth is, and while I was not following the plow figuratively, I was, in a sense, keeping in touch with agriculture. Prior to that time I had been in clerical work, but had never lost my connection or sympathy with agriculture. Consequently it seemed natural to take the secretaryship of that work and go along with it. When I severed my connection with the Missouri Ruralist I took a position with the Boosters' Club of Sedalia and all of the work of that organization ever since it was formed and I became associated with it, has been directly in the interest of the agriculture of the county, consequently if we had not formed a Bureau of Agriculture and had not secured Jordan and put him there, I would still be doing agricultural work in a sense, but I am frank to say that the activities of our club, so far as relating to agriculture, have been prompted by selfishness, and if you divest the actions of the commercial organizations all over the country of all the elements of selfishness, there will not be enough left, figuratively speaking, to obscure the sunlight. Our business men realize that, directly, so far as they are concerned, the only thing in the farm and the farmers' business that interests them is the surplus that the farmer produces. They do not give a picayune for what he eats up and feeds his family, because that cannot go into the channels of trade. So we established our Bureau of Agriculture. We found that we did not produce enough to sell—the business men found out that. We had to ship in stuff to feed our own people. That is what actuated them to start this agitation for a Bureau of Agriculture. Now you ought to see some of the work that is going on around about Pettis county.

I undertake to say that the towns that are going to have the most successful bureaus of agriculture are the ones that give support to their commercial clubs, where they are gathering and co-operating and working together. I will say further, that it is no reflection on the farmers of such locality that the counties that are going to have the hardest time to progress are those that do not possess commercial clubs. The farmers have been too isolated themselves for co-operation and mutual benefit. If there is no commercial club in the county the farmer will lack the leadership and initiative afforded by harmonious co-operation with business men.

We are supposed to work for ourselves, and that is true. There is not much chance for farmers, alone and unaided, to get together, so that if there is not some one to lead such movement or you haven't a county school superintendent active or interested enough to take charge, as they are doing in some counties, it will not be done. I was in a county the other day where the superintendent was a live wire. He was active and doing all he could. A county that doesn't have that sort of spirit and doesn't have a commercial club is going to be a long time getting ready to get a county farm adviser; so the commercial club is a mighty good thing. And what has appeared to me as being almost incomprehensible in the many years of work that I have been actively engaged in this business, has been that the farmers have been so slow to take the advantage that the commercial club activity affords them. Now, I have heard of a number of commercial clubs that have actively interested the farmers in their organizations to the extent of securing considerable enrollment of them in the membership of their organizations. I have been pretty busy since that information was obtained and I have not had time to investigate it, but I will confess to curiosity to know how to do it. I have been trying it in our organization and have to confess we have not succeeded very far. We haven't very many farmers in Pettis county who have so far aligned themselves with the Boosters' Club of Sedalia. We have a few and they are among the best and most dependable workers. We are going to start now an active campaign in an effort to get more of them. There is no reason why our Pettis county farmers and the Sedalia business men should not be closely aligned, and the commercial club is the instrument to enable them to gather very successfully for the benefit of both. Up to the present time, I am compelled to say, we have not had very much success in enrolling them. Why? They have stood aloof so long, as you might comprehend. There is no excuse for them not being aligned with each other. None whatever. But my observation compels me to confess that there is a whole lot of antipathy between the people in many of the towns and the people of the country surrounding them. That is not true of the business man. The business man that has got sense enough to come in out of the rain, if he feels that way, will not let it be known. He wants to identify himself with the interest of the patrons, the people of the country that patronize him. If he does feel disposed to be snobbish, he will take care to conceal it and not lose his patrons because of it. I am compelled, also, to confess that there is a feeling among certain towns people who are actively in trade, that they do not care to associate very intimately with people in the country. I am glad that feeling is dying out gradually and does not exist to any large extent in some counties, but it does exist to a sufficient extent to arouse the suspicion of the country people generally that the people in town look down on them. I believe the greatest good for town and country people in this forward movement is to break down that imaginary dividing line between the town people and country people, and we have found, so far as our experiences go, that these farm institutes that Mr. Jordan tells us about are doing more to bring the town and country people shoulder to shoulder and elbow to elbow and get better acquainted than anything else we have tried. One of the best things our organization has done for the farmers themselves is to give them a chance to get acquainted. Those farm institutes we have had have given the towns people and the country people a chance to get acquainted.

The chairman has rung the bell on me. I am not going to talk any longer. The one thought that I have to suggest in conclusion is, that the commercial club of the town by cultivating closer acquaintance with the farmer and the farmers' family will reach the farm families and the farmers through such a connection will reach the townspeople and we will break down that barrier and we will all be one big famiy, some living in town and some living on the farm.

THE TRENTON IDEA.

(Reverend Henry B. Tierney, Trenton, Mo.)

I arrived just in time to hear the closing remarks of the speaker before me and certainly he prepared the way for the few remarks that I am to make. Mr. Nelson wrote me asking me to come down to speak on the "Trenton Idea." The "Trenton Idea" has received serious attention all over the country, arousing a great deal of public praise. I have the pleasure of being the originator of it. I acknowledge it myself. I will confine my remarks, however, to the practical operation of this plan of farm and town unity and an explanation of what the "Trenton Idea" really is. I have written a number of

Rev. Fr. Tierney.

pamphlets on it. This summary, however, will prove sufficient in view of the short time we have to discuss our work. The slogan of our commercial club in Trenton is "The Trenton Idea is not lazy; it works."

What is the "Trenton Idea?" A brief, concrete answer to this question will be of interest not only to those in various parts of the country who have made inquiries, but also prove valuable, we hope, to the many communities which will eventually become interested in "The Trenton Idea."

"The Trenton Idea" is not a spontaneous thing. It is the natural fruitage of time and conditions. It simply means that in this twentieth century of commercial supremacy and agricultural efficiency, the farmer and the citizen of the town must unite and co-operate in the fullest sense of the term.

The operation of the idea in our community was successful from the start. Trenton, Missouri, with a population of 6,000, became the field of activity for a commercial club of 500 members, about half of whom were farmers. Thus, from the very beginning, "The Trenton Idea" was put to work and the slogan of the aggregation naturally grew out of the development of the idea.

In February, 1912, the Commercial Club of the city of Trenton, Mo., decided that the results obtained in the past were not entirely satisfactory. After a general discussion and an exchange of ideas, between the individuals composing the organization, "The Trenton Idea" was evolved. The thought is by no means new, but its success in appealing to the intelligence of the community seeking for the highest form of commercial development has awakened the interest of industrial thinkers throughout the country. Leading trade journals and periodicals of importance have featured its origin, history and future significance, as a result of which Trenton, Mo., is in the limelight.

"The Trenton Idea" proclaims in practical terms the reaching out for wider fields hitherto untouched; effects a closer co-operation of the agricultural and commercial communities, and promotes the permanent union of the interests of all the people in the trade territory.

"The Trenton Idea" obliterates the established legal but imaginary line between the town and the country. It extends the zone of activity from the central point of the real town to the circumference of the community at large. It ignores the tendency to confine the trade and commercial activities within the limits of the town or city, and works to the end that the interests of all are the interests of each. It includes both business and social activities of life, and gives vent and direction to the urban and suburban energies of the town and the farm.

With this range of thought clearly before them, the members of the Trenton Commercial Club agreed to inaugurate a new campaign for membership. The new commercial club was to contain not only the citizens of the town of Trenton, but also the farmers who resided within the circumference of the sphere of common welfare; within those bonds "The Trenton Idea" was to operate.

This campaign for membership was unique and decidedly successful. With a previous membership of only 50 members, all of whom were residents of the city of Trenton, the organization grew to nearly 500 citizens of the greater city of Trenton. The total membership was about half farmers, scattered in every direction within radii of twenty miles of the center of the idea. Thus could it truly be said that according to "The Trenton Idea " that Trenton has a population of 20,000 instead of 6,000. The organization, fully representing the territory in which it thrives, became a chamber of agriculture and commerce. A new campaign now in progress promises to increase the actual paid-in-advance membership to 1,000, two-thirds farmers.

In the terms of the definition, a Trentonite is a man who lives within this zone of common interests, whether he walks six blocks or drives six miles. He is a citizen of Trenton and an exponent of "The Trenton Idea" in actual life. In other words, the interests of all the citizens are identical. What is good for the citizen six blocks from the courthouse is good for the citizen six miles from that point. A citizen who raises eighty bushels of corn per acre ten miles from the courthouse has identical interest with the man who raises enough tomatoes on three vines on a twenty-foot-square garden in town to serve his family during the season. The workman in the factory in the old corporate limits has equal concern with the poultry-yard enthusiast on the farm who is making Grand River Valley famous in the production and distribution of the Missouri hen.

Back of and still deeper than the commercial and financial features involved in this proposition lies the better part of "The Trenton Idea," to be found in its practical application to the social side of life. Remarkable results have already been accomplished in that particular during the last twelve months. The old suspicion which the farmer unconsciously entertained toward his fellow citizen in the city, and the similar feeling which the townsman entertained towards his friend in the country is rapidly dying out. Every citizen in the country realizes that it is to his own interest to co-operate to the fullest with his fellow citizens "in town." There is no line whatever between town and country. And why should there be?

The results have been marvelous and the business man and the farmer both cheerfully enthuse on the significance of "The Trenton Idea" at work in the social sphere of everyday life. Here is the nucleus of the actual solution of the back-to-the-farm movement and a firm initial step in the right direction toward the only reform which can reduce the high cost of living. It is the biggest idea of the century.

"The Trenton Idea" ignores all factions. It aims to socially unite and cement together in pleasant social bonds every unit of the community by welding together in one family the entire citizenship of the greater city. Thus are the conquests of the "Trenton Idea" made possible and practical. These former prejudices, born of the old imaginary corporate line inside and outside the limits, are rapidly passing away. The theory that you can do business with each other in a more satisfactory way where there is a pleasant social side of life affects the better side of man's nature and makes every citizen realize in his heart the truth of the old saying, "One touch of nature makes the whole world kin."

Who can fathom the depths of future development of "The Trenton Idea?"

The Trenton Commercial Club is different from the old-fashioned aggregation. It has received into its young veins the healthy blood of the farm and smacks of the soil, the rich, black soil of Missouri. It deals in men, products and distribution.

"The Trenton Idea" is as contagious as laughter. The glad time is coming when every progressive community will beam with the smile of prosperity caught from "The Trenton Idea," until the new confederation of country towns bound together by the mutual interests of the country and the city. Here is plowed up for the first time a rich new field of consolidation and co-operation. Here behold the rushing together at last of the two great streams of life, commerce and agriculture, the two most permanent factors in civilization.

In a nutshell, therefore, "The Trenton Idea" means that in Grundy county, Missouri, at least, agriculture and commerce are married. "The Trenton Idea is not lazy, it works."

NEED OF A FARM-CREDIT SYSTEM.

(S. M. Jordan, Agricultural Adviser for Pettis County, Mo.)

S. M. Jordan.

In the short time that I have I shall discuss a question that is not new, but quite old. It is new, however, largely to America, but across the briny Atlantic it was worked out years ago. It was worked out in those countries because of absolute pressure, and I wonder whether, with our degree of intelligence in this country, we are going to wait until absolute necessity and pressure drive us to the solution of this question.

We find our farm tenancy on the increase. Fewer people than ever before are owning farms, and unless we modify the situation which is within our reach, that condition is going to continue to increase. If we expect to make it possible for the young people who are to become farmers in Missouri and elsewhere in this country, we must at the same time make it possible for those individuals at least to own a part of the land they till. There is not much of a prospect for a young man and a young woman to begin life together when that prospect is to spend that lifetime on a rented farm. Now, if we cannot modify that condition, I can make you the absolutely sure promise that the brightest and the best of our young manhood and womanhood will continue to drift away from the farm, and I say that this, in the past, has been a calamity in our country. We are as yet not more than half civilized. Under our scheme of civilization we are taking the very cream of our manhood, the perfect types of our youth, and drafting them, possibly, for war and training them to kill. We are taking that quality of manhood and putting them into the armies of this country and training them for a defense that in my opinion is not a right defense. The defense of this country is built up by the quality of its citizenship and not by the size of the armies, and if we will train the farm boys and girls, if we will put that quality of citizenship on the farms, they will take care of this country in the future as they have taken care of it in the past.

But let us pass directly to the questions under discussion. From 1899 to 1909 the production of cereals increased 1.7 per cent. The prices increased in the same length of time 79.9 per cent. The increase in population in the ten years named was 21 per cent. The increase in acreage for growing cereals was 4.2 per cent. The cereal decrease per capita was nine bushels. The indications from the United States census also are that farm indebtedness is on the increase. Tenancy is also on the increase, and these conditions obtain, no doubt, for the greatest reason that the farmer is not realizing a sufficient amount from his operations to meet increased obligations. With an average annual crop of eight billions of dollars he is using six billions of borrowed capital to produce it. When his interest, commissions, transfers, and other incidental accessories are paid, he pays in round numbers $500,000,000 interest on the money he has borrowed. This approximates a rate of 8½ per cent.

In 1911 the American farmer exported $385,000,000 in food products. This paid about 76 per cent of the interest that he paid on his borrowed capital. During some of the years between the dates mentioned his exports were actually exceeded by his imports of food products.

From the above facts gleaned from the late census it should be made clear why such an enormous interest is being manifested in the farmer's welfare. Unthinking persons have criticised bankers, railroads, manufacturers, merchants, etc., for taking such active interest in the promotion of better farming, but when we recognize the fact that the farmer is using six billion dollars of the bank's money or 75 cents on each dollar of the products he produces, it should be reasonably clear why the banker is interested in the farmer.

Railroads and transportation companies make their living by transportation. If the farmer produces no more than he consumes, or a surplus is not produced upon the farms, these industries engaged in hauling must suffer in proportion.

Practically 75 per cent of the raw material for the factory comes directly from the farm. If the farm does not produce the raw material, the factory must close its doors.

At least four-fifths of the products that the merchant handles come either directly or indirectly from the farm. If the farm does not produce the products, the merchant, the manufacturer, the railroad, and the banker must suffer correspondingly.

However, the most disastrous part, as a result of low production by bad methods or otherwise, falls most heavily on those who till the soil. If the conditions that have been mentioned above are to continue unchecked for a few generations, the farm people will be reduced to a condition of tenancy, and we might say poverty, just as they have been in every older country. The business interests just mentioned, together with the various departments of agriculture and with the leading farmers of the nation, have set about to prevent the deplorable condition in which practically every foreign country found itself before measures of relief were even started. It is no more true now than it has been in the past, and always will be, that the farmers' interests and the interests of the business men should be one, but notwithstanding these fundamental truths things have worked in the very opposite.

The very nature of a free-born American farmer is that he loves the liberty of standing alone, but the time is now here when we must lay aside this inborn feeling of independence and realize that we are, to at least a small degree, our brother's keeper.

The very nature of the farmer's work with its long hours and wide field of operations has made it difficult for him to work out the solution of his own problems or to even take measures to throw safeguards around himself and his conditions. This being true, he has been largely the object of the human vampire to rob him of his hard-earned money. Then it becomes necessary, when private interests will not assist him in safeguarding his conditions, that the government must step in and take a hand largely in his affairs. The governments of all other countries have been largely instrumental in alleviating the conditions of the tillers of the soil.

Our towns and cities have to a great degree been playing only the part of parasites when they should have been helpers for the farming interests. Millions of dollars of food products are annually going to waste because neither our towns, nor the farmers themselves, have been able to find adequate markets, yet there are many places where these same products would be in demand. It occurs to me that one of the great functions of any town would be to look after the market or the business end of farming, yet in a very great degree this has not been accomplished.

A great many men in what is termed "business" have simply made their money by the transfer of wealth rather than any production that they have made. Wealth in this way is only a relative term, the same as when I win a dollar you lose it. The time has come that if the business man will not fly down from his selfish perch and assist us all to scratch for bugs, the farmers must get together on a common ground to expel a common enemy.

This brings us to the point of what we shall do to relieve some of the conditions that are rapidly growing upon us. Perhaps the best posted man on these questions is Embassador Myron T. Herrick, who is at the present time giving exhaustive research to these problems in Europe, as they have been solved there.

Fundamentally, no business can thrive to the best advantage if insufficiently capitalized, or if that capital that is being used is burdened with too high rate of interest. This condition made necessary the establishment of means whereby cheaper money and on easier conditions could be obtained by the farming people. This had its origin in Germany, but did not begin until the people were reduced to an abject condition that in many cases was pitiful in the extreme. Perhaps as much credit is due to Mr. Raiffeisen for the beginning of this work as to any other man. He found that by a system of co-operation by a small number of people each working to the common good and making each one liable to the full extent of his means for the accounts of the organization, that great benefits could be secured in the way of personal credits. These societies or organizations in Germany are known as the Raiffeisen banks. They started as rather independent organizations, but at the present time they are largely co-operative throughout the Empire. They work on the general central bank plan, a central bank being merely a receiving and distributing point for funds of the various outlying banks. Laws have been passed, also, providing for rigid inspection of these institutions and they have taken such measures as render the money that people may deposit with them absolutely safe. Instead of working an injury to the commercial banks they have done the very reverse and become feeders for these institutions. It was thought by a great many banks in this country that the postal savings banks would work them harm, but time has demonstrated the exact reverse by bringing money out of hiding and putting it into circulation.

No man who is not of a high moral character can become a member of the organization and the credit that is extended to him is always for specific purposes which are known by the committee having the loans in charge. The money that he uses is handled much like the overdraft in our banking system, and he is simply charged interest on this overdraft, as we might call it, until the overdraft reaches the limit that the society guarantees his credit. Whenever a dollar is in use he is paying interest on it, but as soon as he can replace the dollar that interest stops. In other words, it is working on the principle as lending him only such dollars as will be active. Under the present system he is having to pay interest on too many dead dollars. It is not my purpose to go into the minute details of these institutions, as that is quite a long story.

The more important of the European credit systems is commonly known as the system of "land banks." Laws differ in many details in the various countries, but the general principles upon which they are based are quite universal. The first and all-important fundamental idea is absolute safety for the funds invested in these farm-mortgage securities. An issue of $100,000,000 of 3 per cent, 70-year negotiable bonds of $20 denominations was authorized a few years ago by the Credit Foncier of France and this was so popular that it was over-subscribed eighteen times. These bonds are issued against first mortgage real estate and find a ready market on any of the European exchanges. Putting them in the bond form they are easily handled, and being in small amounts, people of limited means are investing in them much on the same principle as the gold bond issue of the United States was subscribed for a few years ago.

The land laws of Denmark and of Ireland have rendered an enormous aid to the men of small means desirous of owning a piece of land. These laws have put human rights above property rights and have divided the land owners into two classes, one the resident owner and the other the nonresident owner. The state steps in with the right to secure ownership by buying the land of the nonresident owner, and the price is determined by a commission. If the prospective purchaser has ten per cent of this price here, the state or some of the credit societies will lend the money and pay for the remainder and take a long time loan, running usually from 40 to 70 years. A small amortization rate is charged in addition to the legal interest rate. That is in the event that the legal rate of interest be 3 per cent and the borrower is charged 5 per cent, and by the 5 per cent payment every year he pays his interest and pays off the principal in just fifty years. These loans, however, may be paid at any interest-paying period.

Under the operation of this law since 1906, the tenant ownership of land in Ireland has increased more than in the thirty years prior to that time, while in Denmark eighty-nine farmers out of every hundred now own the land they till. These very conditions lead to co-operation in matters of buying and selling, as each individual member is interested directly or financially in the interests of every other member. While the main thing that we need in this country is the ability to handle the farmers' credit, which is the very best credit in the world, I believe at this time that what interests us most is not a real knowledge of the intricate workings of these methods but some legislation that can be generally put into practice. While legislation is important, organization is positively fundamental.

The conditions in this country, since there are no more government lands, are year by year growing harder, and since lands have doubled in value during the past decade and in productive value have actually gone in the opposite direction, it is all the more important that measures be worked out so that the young man with but small means may more easily become the owner of the land he tills.

CLOSER RELATIONSHIP BETWEEN CITY AND COUNTRY.

(T. N. Witten, President Trenton Commercial Club.)

There are many great questions before the American people to be solved. I believe there is none that is deserving of more intense thought and of more real value to the government than bettering the conditions of rural life. In order to do this there must be a closer relationship between the citizen in town and the citizen in the country. I believe that in our county we have solved this problem, the solution of which will be a great benefit to all small cities and towns and rural districts. I refer to what is known as the "Trenton Idea."

The "Trenton Idea" proclaims, in practical terms, the reaching out for wider fields hitherto untouched; results in a closer cooperation of the agricultural and commercial communities, and promotes a permanent union with the interests of all the people in the trade territory commercially, agriculturally, civilly and socially. It obliterates the established legal but imaginary line that surrounds the town and country. It extends the zone of activity from the central point of real town to the circumference of the community at large. It ignores the tendency to confine its efforts within the limits of the city; tends toward the uplifting of the whole community or trade territory contributary to the town; works to the end that the interests of all the interests of each and gives vent and direction to the urban and suburban citizen, each alike, in uplifting the whole community in every way possible to better the conditions of that community. Many a man has fitted and equipped himself for bigger and better success in his own business by his public activities in the interest of all the community.

At last there has been an awakening of the great commercial men of the country to the fact that back of all success lies the agricultural district of this great commonwealth. Never in the history of the world has there been such an awakening to the fact that there must be a closer relationship between commerce and agriculture, that they must get in closer touch and sympathy with each other. To do this, they must first understand each other better. There never was a time when there was as much brain and money both working to better the conditions of the farm and to increase its earning powers. Wonderful strides are being made along these lines. Many things are being done to better social conditions, to keep the young blood of the farm content and satisfied, and to smack of the rich black soil. Full and satisfying is life that it is possible to get while studying and cultivating the soil, one of God's first commands.

Good roads, better rural schools, improved farm machinery, both for the housewife and the farmer; modern farm houses with all the conveniences possible for the city man to have—all these are fast turning the rural districts into an immense acreage of suburban homes—and making the city resident envious of his rural neighbor.

Thus, by removing that imaginary line that surrounds every country town and by being in closer touch and sympathy with each other, the differences between country and city life will soon fade away, and with the united effort of the whole people, for the whole community, we will solve this question to a great degree.

The man who lives in the community and saps from its rich resources both financially and socially and gives nothing back for that which he receives is a poor citizen, and he is beginning to be looked upon as a leech on the community in which he lives. I am glad to see the time coming when his rating as a citizen in that community will depend upon the kind of citizen he is making for the country, rather than upon how many dollars he has made.

I believe that the good citizen in a community is the one that tries to do a little good every day at some cost to himself, and the one who works as hard and plays as fair in the night or when alone as if the whole world saw.

Emerson tells us the eternal truth when he says, "A community is but the lengthened shadows of its citizens," and I believe that this is very true. You owe it to your community to try to do something every day that will raise the standard of your surroundings.

Missouri Association of County and District Fair Managers.

OFFICERS.

President—J. Allen Prewitt, Independence.
Vice-President—Jack Harrison, Auxvasse.
Treasurer—B. E. Hatton, Columbia.
Secretary—E. A. Trowbridge, Columbia.

PROCEEDINGS OF MEETING.

The Missouri Association of County and District Fair Managers met in the office of the secretary in the Agriculture College building at Columbia January 15, 1913. The president, J. Allen Prewitt of Independence, being unable to attend the meeting, Dr. A. W. McComas of Sturgeon acted as president. The minutes of the previous meeting were read and approved. The president's address was read by Secretary E. A. Trowbridge. A representative body of county fair officers from throughout the State was present and the meeting was one of the best the association has held.

Much time was devoted to the discussion of legislative matters. Different views and suggestions were thoroughly gone over and in the discussions which resulted, many valuable points were brought out. It was the sense of the association that the Legislature should be asked to enact a law governing State fairs in Missouri, and to encourage in every way possible the county and district fairs of the State. The bill, as proposed, provided for a State appropriation of $60,000, and would make it possible for fairs to draw 40 per cent of their agricultural and live-stock premiums, the idea being that the State could well afford to aid in the upbuilding of the county fair that is properly serving its community.

Secretary Trowbridge called attention to the county fair bulletin, issued last year by the Missouri State Board of Agriculture. This bulletin was prepared by Secretary Trowbridge and copies of it were mailed to the secretary and president of each county fair in the State. In addition, several thousand copies were mailed out to other interested parties.

Reports were to the effect that in a number of counties the county courts are now aiding the county fairs by making limited appropriations, as the law allows, for agricultural and live-stock premiums. County fairs are more and more becoming educational institutions and wherever this is true there is evidenced a greater willingness on the part of the people to give them the support which they deserve.

ANNUAL ADDRESS OF THE PRESIDENT.

(J. Allen Prewitt, Independence, Mo.)

I greet you all with the fullest hope and the most abiding faith for and in the progress of our cause in 1913. What I shall say shall be brief and to the point. My appeal to you shall be for the union of all the forces and influences that are now working for the advancement and betterment of the agricultural interests of the State and Nation.

J. Allen Prewitt.

Although a lawyer by profession, my heart has always been with the farm, because it was there that I was born and there I received what I now know to be the best that in me is. Than nature, there is no better teacher. To the farm I expect again to return because my sympathy is with the farmer, and to me the highest hope of all the future lies in the rugged honesty and independence that it takes to make an ideal farmer. The development of agriculture and its allied industries really measures the civilization of any people. I have said this much in the hope that you will hear me as a farmer and not as a lawyer.

If I have any criticism for the Missouri farmer, I would say that he has paid too much attention in times past, to the sinister politician (who has too often been a lawyer) and not to the great work of the farmer, both in the field and in the legislative halls, yea, even in the executive office itself.

What does it matter to the Missouri farmer whether our governor be a handsome Republican, a homely Democrat or noisy Progressive, if he simply looks wise, draws his salary and makes the Chautauqua circuits, and is not wholly, vitally and unmistakably interested in the progress of the State and the development of its natural resources through those artificial methods which we know do get results.

It does, however, matter very much to the Missouri farmer if his State, through its officers, builds rock roads, encourages agricultural development and stock raising and lends the great power of the State to the promulgation of the idea that is now possessing the Nation. This idea is expressed in the words, "Back to the Farm."

Saddle horses at Boone County Fair, Columbia.

I would say, "Forward to the Farm" as more fitting and expressive of the desired change. This association should emphasize its purposes to the end that all the work for which we plead and have been pleading should be done in each county through the agricultural and mechanical societies that are designed by law to do these very things.

The bankers of the State are just now awakening to the ideas that we have preached and promoted since the inception of our organization. The Missouri State Bankers' Association, through the various groups of that body, have recently arranged for mass meetings in the several counties of this State for the purpose of devising plans to put farm experts in every county, who will be at the service of every farmer seeking the same. These bankers seem to have overlooked the fact that we are engaged in such work and that we have not only invited but craved the co-operation which they can give. These institutions are endeavoring to promote the very thing that we urge. I therefore plead for a union of the forces and invite the bankers and all other business men and institutions that are nursing similar beliefs to do their work through the agricultural societies.

If there is a donation to be made for the encouragement of intensified farming or for the employment of experts for the education of the farmer along scientific lines, why should it not be made through the agricultural society which has been conceived and organized for that very purpose? If the bankers of the State have decided to raise a fund for such a purpose, why should it not be intrusted to the county agricultural and mechanical society? I call your attention now to the fact that our Legislature is in session; that among other such bills, there will be one introduced amending our present law, making it broad enough to compass all that may or can be done along the lines in which we are working, so that there will be no need of going outside of the agricultural and mechanical society for any such work. I hope that every member of this organization will lend his special aid toward the passage of the bill.

We need not worry or concern ourselves about the success of our annual fairs. When the interest in production is developed, a great fair follows as a natural sequence. If we can locate on every farm in our respective counties a foundation herd of pure-bred stock, we have made the fair indispensable. If we can show the farmer how to make his land grow two portions of increase where now he grows but one, an agricultural hall or school will adorn the grounds of every agricultural and mechanical society in the State, and our State Agricultural College will be fed on the cream of our commonwealth, the country boy.

Do not worry about the fair but pull for the union of the forces that will make the fair inevitable and indispensable.

I therefore recommend that we continue our organization work along these lines. Let us work with all the enthusiasm that our zeal can generate to make Missouri a state of highly developed farms; a state of the best roads in the world; a state of farmer-statesmen, not politicians, but real statesmen; a state pledged by purpose and by precept to the elimination of the useless and the encouragement of the things of real worth and substantial value. There is no place in Missouri for the parasite. We do not need him. There is no place in Missouri for the cheap politician. We can not use him in the kind of service that we want and really need.

Away with the demagogue and all that he represents. Let us work for something that is worth while. I would paraphrase Goldsmith's lines by saying:

> Ill fares the land; to hastening ills a prey,
> Where wealth accumulates and farms decay.

THE COUNTY FAIR EXHIBIT.

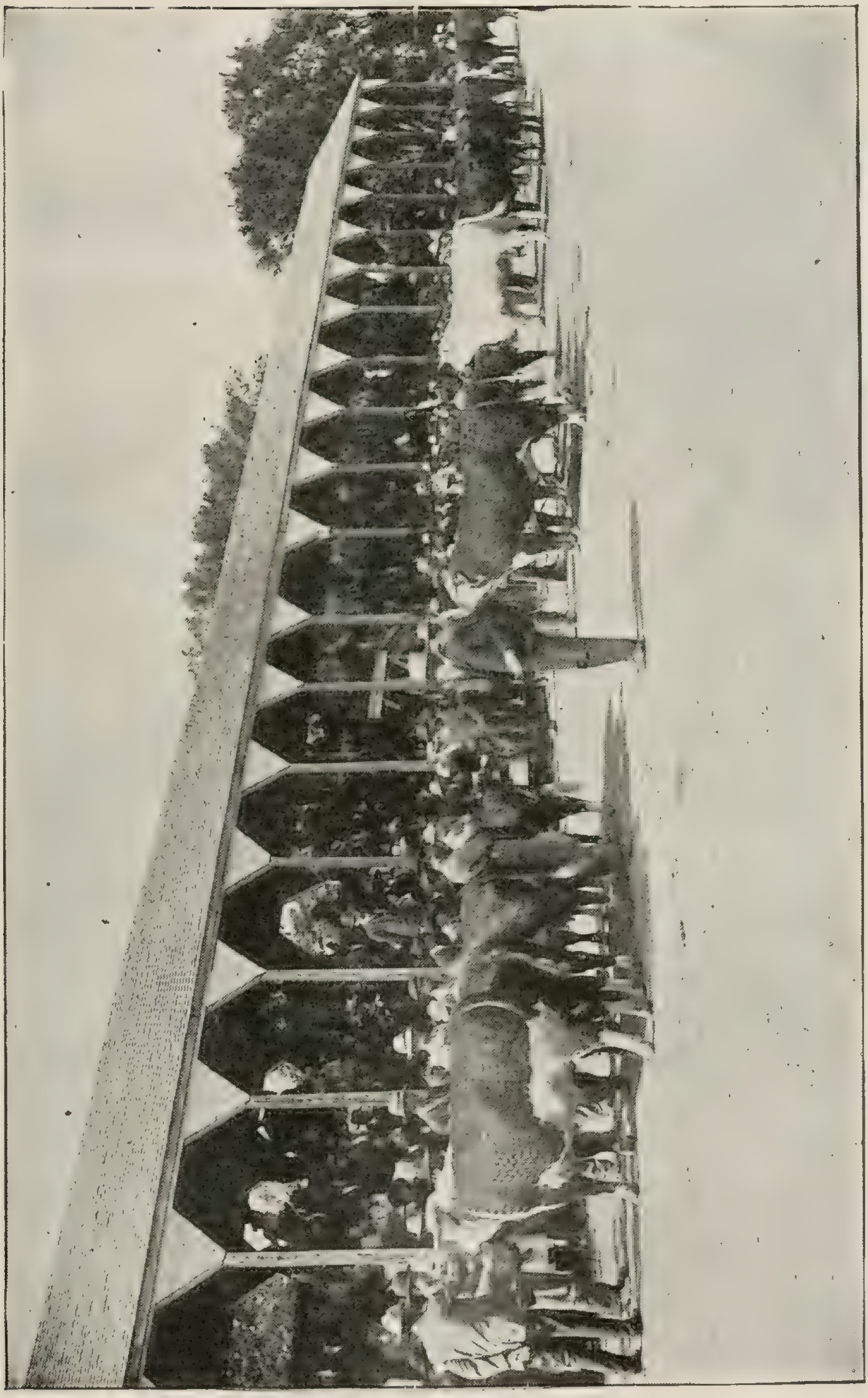
(Dean F. B. Mumford.)

I want to express my pleasure at being able to welcome the representatives of the County Fair Managers' Association of Missouri to Columbia and to the College of Agriculture during this Farmers' Week. This is an educational week and it is particularly appropriate that the county fairs should be represented here, because I do not know of any other rural organization that is doing any more in an educational way than the county fairs of Missouri. We feel that you are co-operating in the work of the College of Agriculture in these meetings.

I believe I am on the program to talk to you particularly about the exhibit of the College of Agriculture at the county fairs. I want, in the first place, to say that the best exhibit that so far has been made by the College of Agriculture at the county fairs are the live stock judges that have been supplied by the department of animal husbandry for the purpose of passing upon the live-stock exhibits at these fairs. About five or six years ago I wrote to a number of you and suggested that it might be possible for the department of animal husbandry to supply you with judges for live stock. It was the business of the department of animal husbandry to train men to judge live stock. I got some very interesting letters from certain people who said my proposition was preposterous. They didn't want any beardless boys to come out and judge their live stock. They didn't want any college judges. That put somewhat of a damper on my enthusiasm, but at least two fairs decided to try it out with much hesitation and misgiving, and one of the men who was sent out that first year was

Mr. Cochel, now here talking to the cattle feeders and at present professor of animal husbandry at the Kansas State College of Agriculture. The next year five fairs employed college judges, the next year fifteen, the next year thirty, the next year forty-two, and the last year over fifty. The condition now is that we are practically unable to supply enough of these young men to go around. This is the best exhibit that we send out and I want to say on behalf of my colleagues that we greatly appreciate the courtesy that you have shown these young men and your charity in the mistakes which they sometimes make. I have never seen a judge yet who was able to judge all classes without making a mistake. But their work seems to be satisfactory.

For the last two years we have been making an exhibit of the College of Agriculture and attempting to demonstrate some of the work going on here. We have no money for making such an exhibit, but succeeded in getting our board of curators to appropriate sufficient funds to prepare an exhibit and I took the matter up with the fair associations as to whether or not they would pay shipping charges and expenses of a man in charge. The reports that I have received have so far been very favorable. I have tried to follow up these exhibits to find out what you people think about them. I wrote the secretaries of the county fairs last year who had had our exhibits and said, "I want you to tell me frankly what you think about the exhibit that the College of Agriculture sent out. Is it worth while, did it appeal to your people, do you want it any more? I hope you will be perfectly frank with me so I will know if this is a good project to push." Some replies were like this: "As secretary of the organization I had so much to do during the week that I didn't see your exhibit." However, in some cases I wrote to the other officials and they told me that in general it was satisfactory; in others it was not spectacular enough. We have tried to make it educational and as interesting as we can and not too dry and uninteresting, and we have sent men along to demonstrate. I feel that the experiment has been successful and we want to co-operate with you gentlemen in making the Missouri county fairs educational institutions. If this little exhibit that we are sending out will help to do that, it will be continued. If you gentlemen want it, we will send it. If you don't want it, it will be discontinued.



CATTLE ON EXHIBITION AT THE MONTICELLO, MISSOURI, FAIR.

COUNTY FAIR CLASSIFICATION FOR LIVE STOCK.

(Dr. A. R. McComas, Sturgeon, Mo.)

One year ago the following resolution was unanimously adopted by this body:

Dr. A. W. McComas.

> Resolved, That the State Board of Agriculture be requested to promulgate for the use of county fairs and agricultural and mechanical societies, rules and classifications for judging different classes of live stock, and that they furnish to the secretary of each county fair, agricultural and mechanical society and to the State Fair, blanks on which awards on the different classes under the proper heads may be filled out, containing name, age and breeding of each animal. These blanks to be certified by the secretaries to the Secretary of the State Board of Agriculture, and printed annually in bulletin form.

The object of this resolution was twofold. First, that there might be a uniform distinction between the different classes and each class so clearly defined that the awards properly made would fix in the mind of the spectator the requirements for each class.

Second, that the blood lines of the winners might be known and the production of animals filling the requirements of the different classes rendered easier and more precise.

Seeing the awards at one county fair, then going to another in a different locality, both equally distant from the market, we see the classification partially or radically changed. So, when the breeder tries to produce an animal that will meet the successful requirements of the show ring, he is bewildered and oftentimes quits in disgust. In one locality, as this of ours, where the saddle horse has attained the highest degree of perfection, the more a light horse resembles him in confirmation and temperament the more certain he is of receiving the award in any class where he may be shown. The exhibitor is elated and has dreams of a world-beater, but when he goes to another locality, or where each animal is judged properly according to his class, he has a rude awakening and gives up in despair.

One of the banes of the county fair is the dissatisfied exhibitor. He calls in all his friends, relates his troubles and they in their sympathy oftentimes agree that he has been purposely wronged and condemn the fair from the president down to the ribbon-tier. When, as a matter of fact, he may have been trying to win the saddle stake with an immature horse or one that should have been educated for the harness classes. This does not apply to the professional exhibitor for he will try again, but to the breeder or chance owner, who after seeing the awards in his locality and having a desire to breed or own an animal that will excel in show rings, he spends his time and money and retires, feeling that the whole business is crooked.

These are the men that should be encouraged. It is this class, in every community, that combines pleasure with profit and who do things. They would help raise the standard of the county fair by their earnest interest and would derive a great profit from its educational advantages. By breeding along more rational lines they would be more successful and their neighbors would imitate them. The same is true in every line of agriculture. The bulletin issued by the State Board of Agriculture under the personal direction of Professor E. A. Trowbridge, in response to the above resolution, is a creditable one and highly instructive. It shows that they are truly a board of agriculture and willing to undertake anything within their power to advance the agricultural interests of the State. If I were to suggest any modification at all, it would be that in addition to the description of the different breeds of animals and their uses, I would promulgate a set of rules numbering them one, two, three, etc., showing the distinct characteristics which mark each class and pointing out where each breed and class is liable to be deficient, so that errors in awards could be reduced to the minimum. It should be emphasized, and repeated if necessary, that unsoundness known to be transmissible to the offspring should bar males and females from the show ring. Failure to observe this rule has cost breeders much worry and money. These rules should be made so short and concise that they could be incorporated in the catalogue of each county fair. Then for amplification, if needed, the bulletin could be referred to.

There is one other point—not the classification live stock, but the classification of the judges who make the awards. It is positively useless to spend time classifying live stock unless you have competent men to judge the entries. This needs no argument.

I earnestly hope that the Board of Agriculture may be enabled during the coming year to comply with the latter section of the resolution, namely, "to embody in a bulletin the name, age and breeding of the prize winners in each class," then will the county fair have some standing as an educational institution.

COUNTY FAIR GRAIN CLASSIFICATION.

(S. M. Jordan, Manager Pettis County, Mo., Bureau of Agriculture and Farm Adviser for Pettis County.)

The object of the fair, of course, is for stimulating better production of a higher quality and not your "long-stalk" classification. You do not offer any prizes for the freaks and abnormalities in live stock, yet you do offer such classifications in other farm products. Yet we find in the same fair the freaks and deformities are given prizes, and in corn especially we sometimes find the prize offered for the largest ear, for the greatest freak, a prize for the tallest stalk—and about nine times out of ten the biggest ear of corn in the show is not worth its ribbon. The tallest stalk of corn is usually a bad one and a freak carries no value with it whatever, so that in all of our classifications in fairs, no matter what it may be, quality should be the chief object to be kept in view all the time. Only a short time ago I was called upon to award a prize of $4 on an ear of corn, and if a man had planted it in my field I would have had him arrested.

A classification has to be arranged largely according to the premium list that we have. Sometimes we have a large list of small merchandise products and we have to offer a great many premiums. Sometimes we also have a very good list so far as value goes, but very few things in that list. If necessary to offer a great many premiums, always give the number of premiums with reference to quality.

With reference to grain, our people in Missouri should know what sorts of wheat they should grow. We find we can grow a good yield of wheat, yet we know that by growing hard wheat in Missouri of the same strain continually, it becomes soft, the grains turn yellow or light, and that makes a low market. There is no good market for a wheat of that kind. Since we cannot hold up the quality of hard wheat in Missouri we should cater to the best varieties of soft wheat, because we can grow it to excellent advantage. We find also that the best corn growers, in offering their premiums, are offering them on the pure-bred varieties of corn. Once in a while, however, we find a show where a premium is offered on mixed corn. Only a little while ago I found a show of that sort and I was very glad indeed to find they had offered some prizes on some mixed corn, because it was plainly seen that the mixed variety in no way compared with the pure-bred corn. So that sometimes these things may be valuable to teach a lesson. In making a wide classification we find that in various places contest work among young people is one of the most valuable things that we can inaugurate.

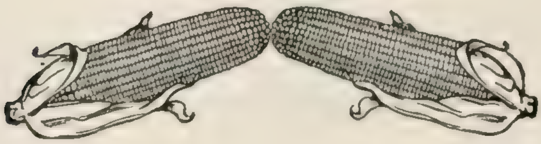
Maybe I ought not to say it, but there is not one man in ten who uses just a little gumption in the selection of his seed corn. He does not understand the principles of selecting seed corn. We go to the show and pass judgment as to how the ears will rank in the show, but no man in the universe knows enough about corn to know which ear is the better producer. We can only determine that by an actual trial and by the study of the plants on which the corn grew, and we cannot study the plant from the ear. We find sometimes that there are a few things that may indicate yield in corn, but the only true indication is by a study of the plant itself. In a contest we had in Pettis county the men brought in fifty good stalks of corn pulled up and with the ears attached. The contest was for the class to pick out ten stalks with the ears on them that they preferred for seed, and it was surprising how rapidly they learned that, and it is also surprising that we have not thought of a great many of these things before today. The leaf system and the root system correspond exactly to the lungs and digestive apparatus of an animal, and no animal can be a good one with poor lungs and poor digestive organs, and no corn can be good corn without good vitality. We can give the contest work so far as corn judging is concerned, but the more important thing at this time is the selecting of the ear from the stalk, and that assists in broadening our classification.

In the classification for the various products of the farm we have a great deal yet to learn so far as quality is concerned, or productive capacity that we may be able to determine by individuality. We have about as many different ideas about seed potatoes as we have potato growers. Some men contend that the large, some the small and some the medium seed should be used, and each one has his line of argument. One man will ask me when he should plow his ground, so far as being dry is concerned, in the fall or the spring. I tell him I don't know and he says he does know, and he tells me to plow in the fall, and the next one says plow in the spring. Both disagree. So that there are conditions that modify these things.

We find there is just as much difference in the small grain, also in the clover, as we find in the corn. We find where we plant a row of wheat here that maybe from one grain a single plant will come up and grow, and from the one by the side of it a half dozen, and maybe the next one twenty-five or thirty. In that same lot of plants we will find also that there are long heads and short ones, well filled and poorly filled. In our classification we can have the best list of small grain or best of rye, oats, wheat or clover. Always quality should be kept in mind.

Another thing that we can teach our people is in the preparation of products for the show, which is much the same thing as preparing that product for the market. A vast number do not understand the value or the method of preparing goods for market. They have tried it a long time by putting the good eggs on top and the best apples on top and the finest corn on top, and this method has been proven a boomerang, as it reflects on him and to his own detriment.

We often have prizes for corn, say on white corn and on the yellow corn; then we will have, maybe, the ten ears, one hundred ears and single ears; then we will have the sweepstakes prize over all, on the single ear, ten and one hundred ears. The way it is too often arranged, the man who wins the first prize in any class is entitled also to a sweepstakes prize. In other words, he is winning two prizes when possibly the winning of these would not be exactly fair. By the score card there may be but one-fourth of a point difference. The one wins two big prizes and the other gets nothing. To offset that condition or to remedy it, would be to first place one prize on the best sample in the class, then place the prizes from that down. It thus avoids one man receiving two large prizes when the prizes are possibly closer together. This stimulates effort among a great number of people, and the classification should be made just as broad as the premium list will justify.



The Missouri Corn Growers' Association.

"Increase the Yield—Improve the Quality."

OFFICERS.

George H. Sly, Rockport	President
T. R. Douglass, Columbia	Secretary-Treasurer

VICE-PRESIDENTS.

Thos. Slawson, Rea	Northwest District
Alonzo White, Palmyra	Northeast District
E. L. Hughes, Glasgow	Central District
M. McCauley, Doniphan	Southeast District
Simon Baumgartner, Pierce City	Southwest District

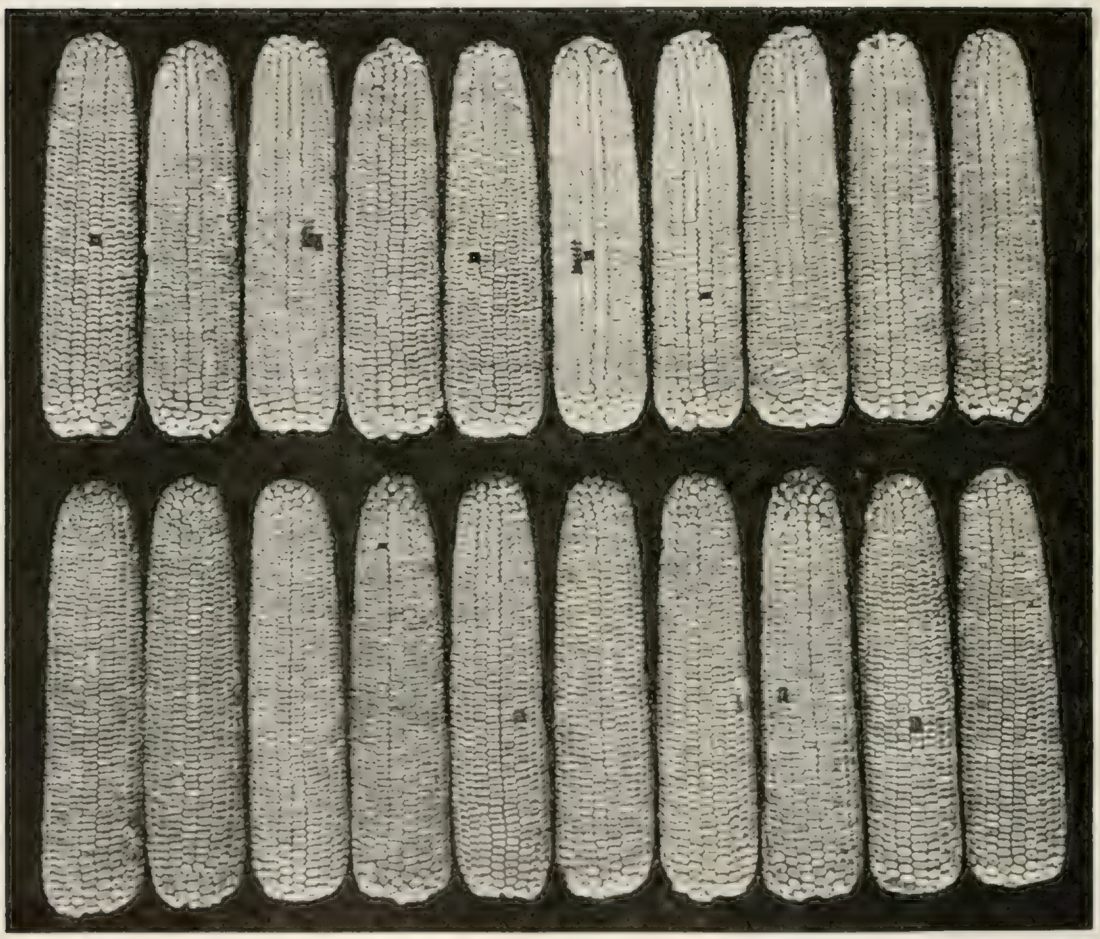
THE WORK OF THE MISSOURI CORN GROWERS' ASSOCIATION.

(T. R. Douglass, Secretary.)

T. R. Douglass.

The past year has been an unusually successful one for the Missouri Corn Growers' Association in spite of the fact that unfavorable seasonal conditions influenced the yield in certain sections. The membership is increasing and practically every county in Missouri is now represented on our list of members. This year Missouri produced approximately 250,000,000 bushels of corn with an average yield of thirty-two bushels per acre. Certainly the Missouri Corn Growers' Association can modestly claim partial credit for this increase in yield per acre, as the annual exhibition has served, in a measure, to instill thoughts of better seed into the minds of many farmers, and the annual meetings and the discussions of the various phases of corn production have certainly helped to interest many men in the greater possibilities of the corn crop.

The purpose of the Association is to increase the yield and improve the quality of Missouri's corn crop. In order to measure the results of each year's work an annual show is held in Columbia during Farmers' Week. The last annual show was by far the most successful we have held. The quality of the exhibits was excellent and the number of entries exceeded any previous year by 100. The special classes for wheat and oats certainly brought out some splendid exhibits, and this new feature will be continued and a broader classification made, as cowpeas, soybeans, timothy and barley samples were sent in for display even though no prizes were offered.



Best 20 ears yellow corn Tenth Annual Missouri State Corn Show, shown by F. M. Reibel & Sons, Arbela, Mo.

The Men's Acre Yield Contest, featured this year for the first time, will undoubtedly grow into one of the important classes of the show. Yield per acre is after all our object, and it is highly important that a study of the methods of securing larger yields be made. In awarding the prizes in this class, yield per acre, practicability of methods, the score of a ten-ear sample from the acre, and the net profit are all considered. It is not necessarily the man reporting the largest yield, but rather the man who can grow his corn at the lowest possible cost per bushel who is entitled to prizes in this class.

The Boys' Acre Yield Contest brought out some splendid reports and there is no question but that this contest is soon to be one of the foremost, if not the leading feature of the annual show. The winner in the Boys' Contest reported a yield of 105 bushels and 30 pounds, five bushels and 25 pounds more than the winner of the Men's Acre Yield Contest reported. The plan of the Association is to aid in the organization of local corn-growing contests for boys in every county of Missouri. In the fall the boys can show at their local shows and the leading samples there will then be shown at the State Corn Show.

The Association at the present time aids its members in every way in disposing of the pure seeds which they produce, and also endeavors to hold in check all unreliable seedsmen. The Association cooperates with the Department of Agronomy of the University of Missouri in conducting variety tests of the various farm crops to determine what varieties are best suited to the different sections of the State. In this way, poor varieties are being eliminated and the worthy ones disseminated more widely.

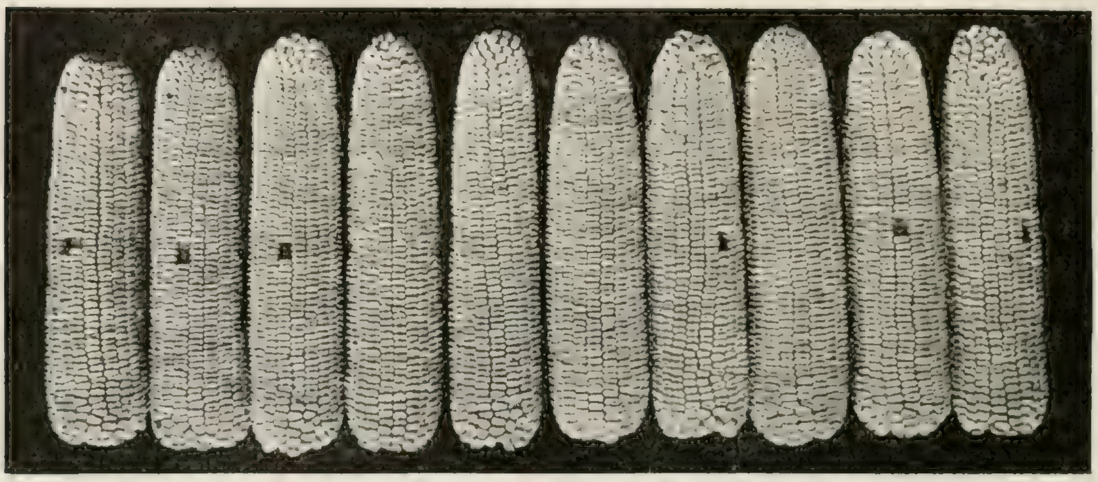
The executive committee is planning many new features which will be beneficial to the farmers of Missouri. The work of the Corn Growers' Association is purely educational. It is striving to improve the farm crops of Missouri and it invites the hearty cooperation of all persons interested in this great work.

HOW I GREW MY PRIZE ACRE OF CORN.

(Glen Caldwell, Milan, Mo.)

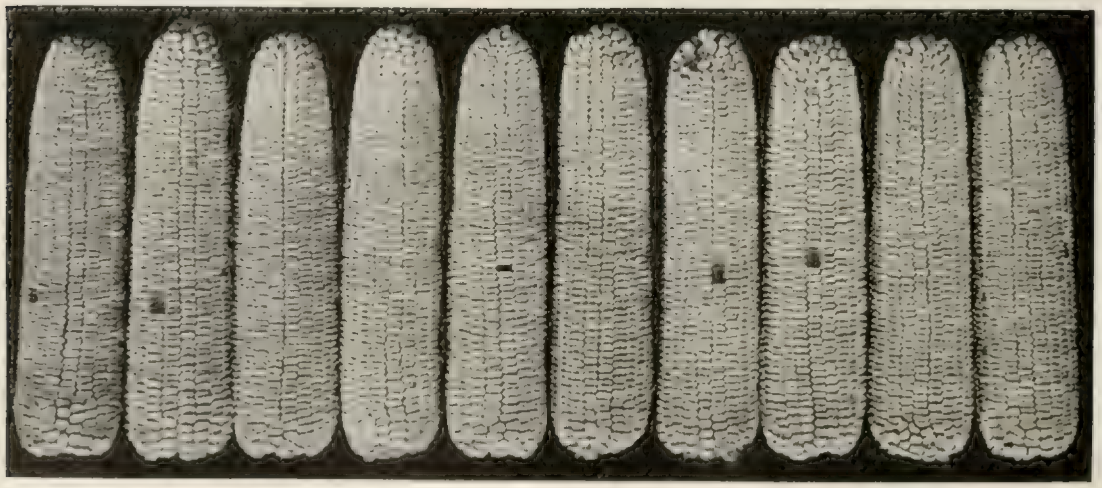
Below is given a report of Glen Caldwell of Milan, Missouri, who won first place in North Missouri in the Boys' Acre Yield Contest for 1912 with a yield of 105 bushels and 30 pounds:

"In the spring of 1911 I sent to Columbia for a gallon of pure Boone County White seed corn. I grew this corn in a patch to itself where it could not mix with other corn, and in the fall when the corn began to get hard, papa and I went through the field and gathered the best ears from the best stalks we could find. We hung these ears up in a shed and in February, 1912, tested them for germination, using a box that would fit under the cook stove. I put a layer of sawdust in the bottom of the box, covered this with a cloth which had been marked off into squares, selected four kernels from each ear of corn, gave each square a number and also numbered the ear, covered the kernels with a damp cloth and put a layer of sawdust on top to hold the heat. About 95 per cent of the ears germinated 100 per cent, and these were selected for seed.



Grand Champion, 10 ears Johnson County White, Tenth Annual Missouri State Corn Show, grown by Chris Smith, Bunceton, Mo.

"In the spring papa gave me an acre of ground and said I might enter the Missouri Boys' Corn Growing Contest. I picked the acre out of a field containing probably twelve or thirteen acres. This field had been in clover and timothy, mostly clover. I broke the ground ten or eleven inches deep just as soon as the ground was dry enough to plow. Shortly after breaking we had a shower which mellowed the ground considerably. As soon as it was dry enough, I dragged the land and a few days later disked it thoroughly. Before planting I gave it a thorough harrowing, and on May 20th I planted the corn, setting the planter so it would drop one



Champion, 10 ears Boone County White, young men's class, Tenth Annual Missouri State Corn Show, shown by Chester Matheney, Miami, Mo.

kernel every ten inches and would plant the corn two and one-half inches deep. The rows were about three feet four inches apart.

"When the corn was two or three inches high I harrowed it, and June 3rd I plowed it deep with a six-shovel cultivator. June 10th I gave it the second plowing, this time allowing the shovels to go only two and one-half to three inches deep. I plowed this corn again June 17th, and gave it the final plowing July 2nd. For this final plowing I used a garden plow with the three back shovels removed and a long four-inch blade bolted on in their place. The front shovels worked up the ground and the loose dirt would shoot over the top of this blade and leave a perfect dust mulch. The corn came in tassel about July 25th, was ripe by September 25th, and from the measured acre we harvested, November 5th, 105 bushels and 30 pounds of corn.

"It cost me $20.95 to grow this acre, and as the total value of the crop was approximately $50, I had a profit of nearly $30 from one acre alone."

MAINTAINING SOIL FERTILITY UNDER SYSTEMS OF TENANCY.

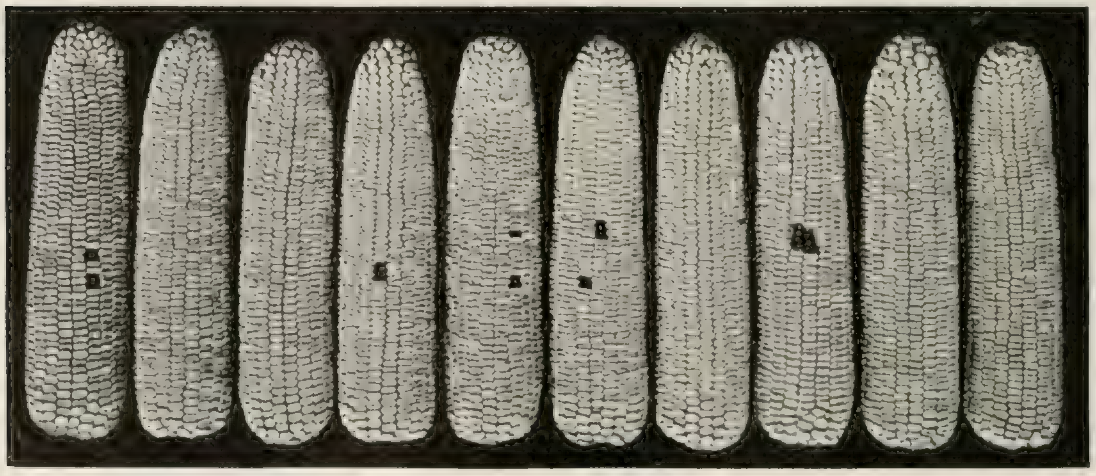
(M. F. Miller, Professor of Agronomy, College of Agriculture, University of Missouri.)

The maintaining of soil fertility under the system of tenancy, common to Missouri, is no simple matter. In fact, it is no simple matter to maintain the soil fertility under any system where one is making a profit at the same time and it becomes doubly difficult where one must work through a tenant. We often hear men talk about keeping up land by a crop rotation, or by growing an occasional crop of clover, or by feeding on the land, but, as a matter of fact, unless all of these things are practiced, fertility is actually rarely maintained. Rotation helps, manuring helps, clover growing helps, but any one of these alone is rarely sufficient to keep a soil permanently fertile,

Prof. Miller.

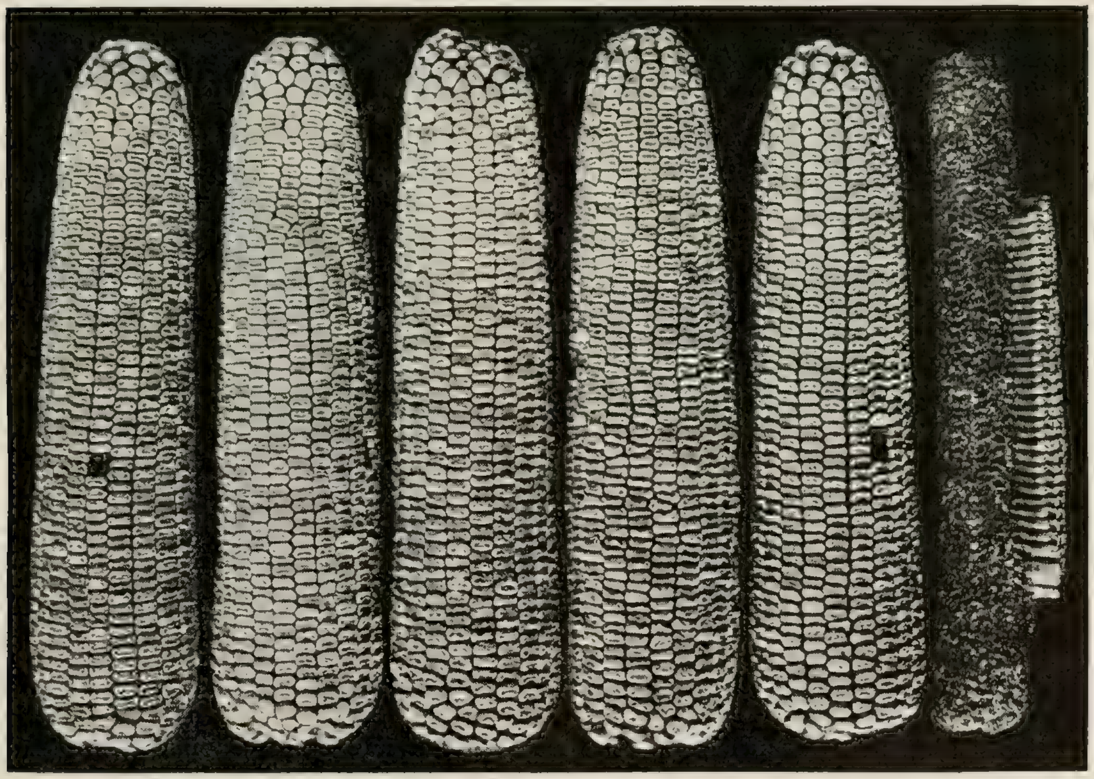
except under exceptional circumstances. To absolutely maintain fertility on the average upland requires not only a careful system of crop rotation, but the feeding back of crops in addition, as well as the turning under of an occasional legume crop, such as clover or cowpeas, and usually the application of some outside fertilizing material, if the soil is to be absolutely maintained in productiveness. It is possible to maintain fertility without feeding the crops to stock, providing only the grain crops are sold and all the straw and fodder is turned under as well as additional legume crops, and providing further that some outside fertilizing materials be applied, particularly phosphates.

Now, to apply such principles to tenant farming, and at the same time to do justice to the tenant himself, requires greater liberality than the average landlord will show. It is possible to work out a system where both landlord and tenant will receive a fair profit, providing both men happen to be of the right sort, but this can rarely be done in any case under a system of one-year leasage. We shall never be able to work out a system of soil preservation with a short-time system of tenancy. Of course, there are all kinds of tenants, and one frequently hears the expression that one year is too long for many of these men, but it has been my observation that the man who treats his tenants in the right way is usually able to get good ones—men whom he is able to keep for years at a time. I realize that the developing of good tenants is no easy matter and that it requires time and patience, but it is useless to attempt to conserve soil fertility with profit to the landlord with a poor tenant.



Champion, 10 ears Reid's Yellow Dent, boys' classes, Tenth Annual Missouri State Corn Show, shown by Harvey Jordan, Shelbina, Mo.

Unfortunately, the whole system of tenancy in the corn belt is greatly influenced by increasing land values and the resultant speculations in lands. Too often the landlord does not know whether he will hold a given farm for more than a year ahead and naturally he is unwilling to go into a long-time contract. So long as the rapid rise of land values prevails, we shall never be able to solve with any degree of satisfaction the problem of maintaining soil fertility under tenancy, because it is almost impossible to develop a uniform tendency toward long-time leases. Naturally, nothing which anyone may say or do will ever change this condition quickly. It is an economic condition which only time can change. Nevertheless, this change can be hastened somewhat, and individual men can do much toward improving conditions on their own farms, particularly where they expect to hold them for considerable periods of time.



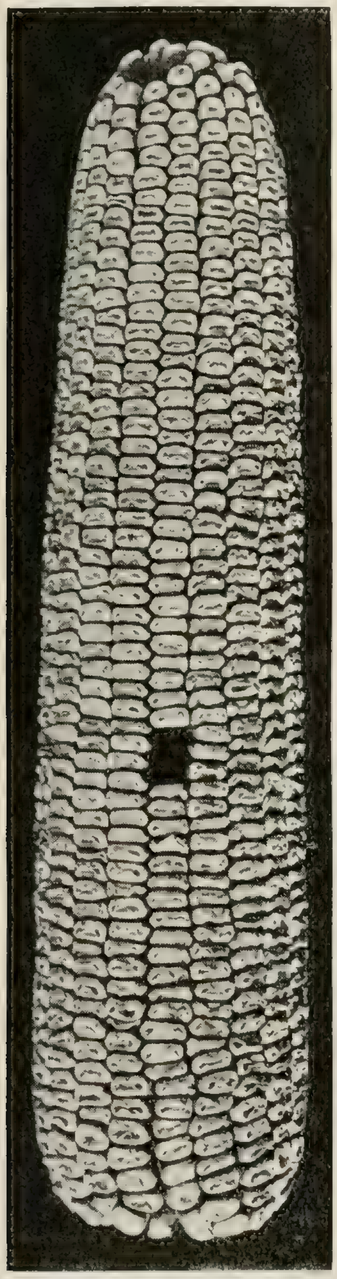
First prize in corn breeding class, Tenth Annual Missouri State Corn Show, Reid's Yellow Dent, shown by H. R. Scott, Tarkio, Mo.

One of the first things that must be considered, therefore, in looking toward a system of soil preservation under a system of tenancy is the lengthening of the lease. The more we talk about this the sooner will it come about, although the change is necessarily a slow one. The second thing that can be done is to impress upon the landlord the importance of preserving soil fertility, and thus prevail upon him to be less exacting with the tenant and more considerate of the land. Under such conditions it is bound to mean that the landlord will either receive less immediate return from the land or he must give more attention to the tenant's method of farming and work out a system which will be both remunerative and soil conservating. This latter system requires knowledge on the part of both men and skill on the part of the tenant. It also requires an entirely different viewpoint from that of the non-resident landlord who simply expects a certain per cent on his investment, too often with no thought of the effect upon the land, or of the effect upon the tenant himself.

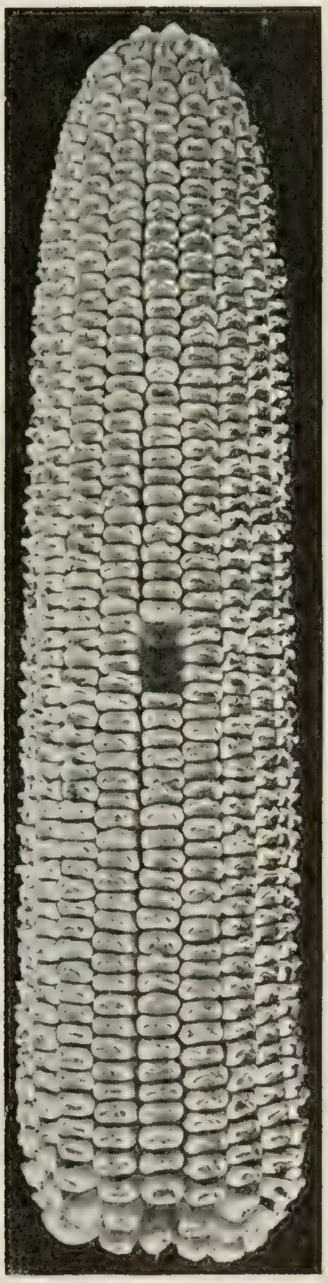
It is not to be expected that many landlords will be able to give either the time or thought to a system of farming through a tenant which will maintain the land and the landlord's profits. The thing that will generally happen will be that in order to prevent the continued wearing of the soil they will begin to insist upon the tenant practicing certain conserving methods. This is already evident in many parts of the corn belt, where leases are drawn with the understanding that the land is to be rotated through a certain crop rotation, or that the crops are to be fed on the land, or that clover is to be grown with more or less regularity. These are among the first things to suggest themselves, and they are all good. It must be understood, however, that such restrictions placed upon the tenant do not usually allow him to make the profits which he otherwise would make. This simply means that the landlord must become more lenient.

Personally, I feel that a genuine interest in the tenant and his welfare is the duty of the landlord, and that we shall never progress very far toward bettering the conditions for either our tenants or our soil until landlord and tenant work together. With the increasing value of farm lands, together with their decreasing productiveness, it is coming to be more and more necessary for landlords to adopt a viewpoint which will allow their tenants somewhat greater privileges, while they at the same time require systems of soil building from them. Where a man is holding land for speculative purposes, he can rarely afford to have it run down, and the man who sees to it that the land is maintained will usually make a greater return in the end than the man who, through extreme requirements on his tenants, causes them to greatly reduce the productivity of the soil, thus materially decreasing its market value.

In addition to long-lease contracts with provisions for crop rotation, clover growing and cowpea growing should be added in some cases, where possible, the co-operative handling of live stock by the landlord and tenant, or, if the tenant is able, it may be wise to require him to feed the crops on the place. Again, the landlord can sometimes better conditions through the supplying of clover seed or cowpea seed for the tenant to sow on the place. While the seeding of both of these crops is expensive, it is usually a paying proposition in the long run for the landlord to furnish them, if the tenant himself is not able to do so. The co-operative buying of a

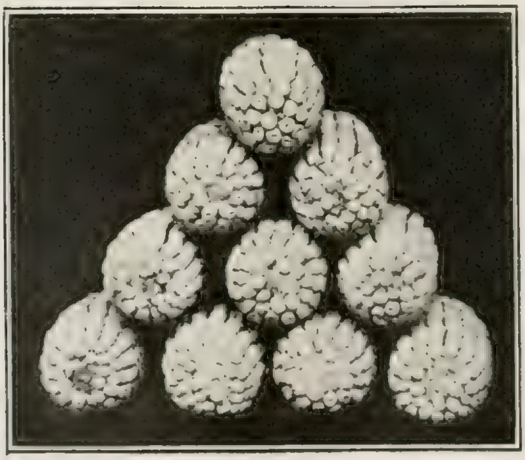


First prize yellow ear, Tenth Annual Missouri State Corn Show, Reid's Yellow Dent, shown by H. L. Evans, Norborne, Mo.



First prize white ear and champion single ear, Johnson County White, Tenth Annual Missouri State Corn Show, shown by Chris Smith, Bunceton, Mo.

manure spreader is another thing that can be done with profit to both landlord and tenant where considerable quantities of live stock are being kept. Whatever method is followed, it should, of course, be arranged so that an equable distribution of profits be shared. In European countries under systems of long-time leasage, the leases state specifically that should the tenant at any time leave the land, he shall be reimbursed by the landlord for such unused manure or fertilizer as he has applied, while on the other hand, should the landlord make expenditures, the return of which would be shared by the tenant, the landlord must be reimbursed in the case of dissolving the lease. In other words, the whole proposition is considered as a business transaction where the land is to be maintained at a given state of fertility, and both landlord and tenant are parties thereto. It will be a long time before we come to such a system in this country. Possibly it will never come, but so long as tenancy exists, long-time leases, with a thorough understanding between landlord and tenant as to the absolute maintenance of the fertility of the soil, must be considered as fundamental to a continued soil productiveness.



Missouri State Dairy Association.

OFFICERS.

President—Marshall Gordon, Columbia.
Vice-President—C. W. Kent, Kansas City.
Second Vice-President—L. E. Cline, Columbia.
Secretary—P. M. Brandt, Columbia.
Treasurer—Rudolph Miller, Macon.

REPORT OF THE SECRETARY.

The twenty-third annual meeting of the Missouri State Dairy Association was held in Columbia during Farmers' Week, January 15 and 16, 1913. A very successful meeting was held.

A great deal of interest in the dairy association has developed during the last year. On September 13th and 14th a meeting was held in Springfield and about fifty dairymen from all over South Missouri attended this meeting. This served as a starter and gave impetus to the interest in the regular annual meeting.

The annual meeting brought forth a good-sized crowd of enthusiastic dairymen and creamerymen. The regular program as printed was carried out as far as possible. The resolutions adopted, the address delivered and the premiums awarded to the butter exhibits are here given.

REPORT OF COMMITTEE ON RESOLUTIONS.

The following resolutions, the first two signed by G. B. Ellis, P. M. Brandt and E. G. Bennett; the third by Messrs. Ellis and Brandt, were offered:

Whereas, The dairy business is of great importance to Missouri and a greater development of this industry will be of great value to all the people of the State; therefore, be it

Resolved by the Missouri State Dairy Association in twenty-third annual session:

1. That we recommend that the Legislature now in session make an appropriation to the College of Agriculture of the University of Missouri of not less than three thousand ($3,000) dollars, the same to be expended with the advice of this association for promoting and developing dairying in Missouri.

2. That we favor the immediate enactment by our Legislature of a law that will effectively prohibit unfair competition in the buying and selling of all articles of merchandise, including dairy products.

3. That we note with great satisfaction the prominent mention of President H. J. Waters of the Kansas State Agricultural College for the position of Secretary of Agriculture in the President's cabinet. By reason of Mr. Waters' long service as the head of Missouri's Agricultural College and member of the State Board of Agriculture, we know him to be a man of broad vision, in thorough sympathy with all agricultural and live stock interests, a strong executive, thoroughly practical and in all most fittingly trained for the leader of American farmers, and we therefore earnestly recommend his appointment by President-elect Woodrow Wilson.

4. Whereas, The dairy industry has grown in this State until it represents a total income to the farmers of about $20,000,000 per year and is increasing, and with this increase in volume comes increasing demand for information and help from those engaged in this industry as farmers and creamerymen, and

Whereas, The Dairy Department of the University has been doing educational work for the dairy interests—writing bulletins, attending farmers' institutes, developing demonstration farms, carrying on co-operative bull experiments, giving definite assistance to those who wish to build silos, etc., and has been of great practical service to creameries and dairymen and to the buttermakers through educational butter-scoring contests, and

Whereas, We as an association greatly appreciate this work and find that it has been of great benefit to the farmers and creamerymen and feel that the Dairy Department should be permitted to extend its outside activities, as the work done so far is only a small part of what needs to be done; therefore, be it

Resolved, That we, the State Dairy Association in twenty-third annual meeting assembled, urge the Board of Curators of the University of Missouri to make it possible for the extension activities of the Dairy Department to be enlarged.

(1) That more men be provided to carry on educational work among dairy farmers.

(2) That funds be provided to enable the present force of instructors to visit the communities where they are asked to come and to do the work they are asked to do, and that an instructor be sent out to give practical instruction to buttermakers where such instruction is needed and asked for.

5. Whereas, The Missouri State Dairy Association, in twenty-third annual meeting assembled, at Columbia, Mo., January 16, 1913, representing 40,000 Missouri dairymen and a business amounting to $20,000,000 annually, request respectfully the Missouri members at the Sixty-third Congress to enact some law that will more effectively stop the fraudulent sale of oleomargarine as butter. A law is needed that will fully protect the consuming public and the producing farmer.

We believe that such protection can be best given by the absolute prohibition of the addition of any artificial coloring matter, or of butterfat, to the beef fat used in the manufacture of oleomargarine. Butter has a natural yellow color that varies with the seasons, and artificial coloring is only added at times to give the market butter a uniform shade. Oleomargarine has no yellow color unless it is put there by ingredients added for this special purpose. The reason for coloring oleomargarine is to imitate butter and make it sell for a near-butter price. We have no objection to oleomargarine when sold on its merits. With the enactment of the above-suggested legislation the present 10-cent tax on colored oleo would be removed. This would make it possible for those wanting oleomargarine to buy it at a much lower price than now. Those preferring butter would be assured of getting what they want, and the producer of butter would be protected from an unfair competition.

Whereas, The bill now before Congress, known as the Haugen bill, embodies the above suggestion, and that bill known as the Lever bill is unfavorable to the dairy interests in that if enacted it would permit oleomargarine to be sold in imitation of butter; be it

Resolved, That the members of this association respectfully ask the members from Missouri of the Sixty-third Congress to give their support to the Haugen bill.

Whereas, The Missouri State Dairy Association represents 40,000 farmers with a business amounting to over $20,000,000 annually and the future of this important business has been endangered by the proposal of a certain bill in Congress known as the Lever oleo bill that would permit the oleomargarine to be sold in imitation of butter, and

Whereas, Mr. Thomas L. Rubey, representative of the Sixteenth District of Missouri and a member of the Committee on Agriculture of the Sixty-third Congress, has been active in the defense of the dairy interests by opposing the Lever oleo bill, and the members of the Dairy Association appreciate his work; therefore, be it

Resolved, That the Secretary of the Dairy Association be instructed to send a copy of these resolutions to Mr. Rubey, and in behalf of the association to tender him their thanks for his interest in this matter and assure him of their best wishes and support.

Whereas, Under the present law of Missouri the responsibility of enforcing sanitary regulations for dairy establishments and laws concerning standards for dairy products is divided between the Food and Drug Commissioner and the Dairy Commissioner and the latter office has never had an appropriation, and

Whereas, The members of this association are in favor of strict enforcement of standards for dairy products and of sanitary supervision and favor such arrangements for securing law enforcement as will be most efficient, and

Whereas, The Dairy Commissioner by the present law is made responsible for the giving of instruction in all lines of dairy work and in this way duplicating work that this association believes can be done more efficiently and more economically by the dairy department of the University; therefore, be it

Resolved, 1. That for the greatest efficiency the enforcement of all food laws should be under one head, and this should be the Food and Drug Commissioner.

2. The Food and Drug Commissioner should be given sufficient funds to allow of the employment of the necessary number of competent dairy inspectors to properly enforce the law concerning dairy products, including sanitary inspection.

3. We recognize that it is the function of the dairy department of the University to give such information concerning dairying as the people may desire.

ADDRESS OF THE PRESIDENT.

(Marshall Gordon, Columbia.)

Last winter during Farmers' Week we had the coldest weather I have ever known, and this fact prevented a large number of dairymen and farmers from attending our convention. Presidential timber therefore was quite scarce, and this accounts for the fact that the speaker is now your presiding officer. This honor having been thrust upon me entirely unsolicited, I can make only one promise, that is, to do my best to serve you acceptably.

This association has been in existence twenty-three years. It has numbered among its members some of the best men of the State. They have done a great work in the past and deserve our lasting praise and gratitude.

It was largely the work of this organization that brought about the establishment in our Agricultural College of the dairy department with its equipment of stock and buildings and its splendid corps of professors. These men are not only working out scientific problems in feed and breeding dairy stock and teaching our boys how to farm, but they are coming to our very doors in the farm institutes and telling us how to feed and care for our cows and build up our farms.

Gentlemen, this association has done a great work in the past, but there is much to be done in the future. In order to accomplish all that we ought, we must keep up our organization. Get your brother dairymen to join our State association and pay us his dollar annually. Get him to come here Farmers' Week, appropriate new ideas and teach the rest of us what he knows.

I do not believe in making a great furor and trying to induce every man to become a dairyman, for if we succeed in this, our business would soon be overdone, and eventually, like Othello, "our occupations would be gone." But rather let us work to make, not more dairymen, but better dairymen. And let us unite in our great State organzation in order that we may demand and get what we deserve.

Gentlemen, at the time you elected me your presiding officer, you very wisely selected Professor P. M. Brandt as your secretary and Mr. Rudolph Miller your treasurer. These gentlemen, with what assistance I could give them, have fought valiantly for Missouri dairy interests.

There has been, as most of you know, a bill before Congress known as the Lever bill, a measure to take the tax off of colored oleomargarine, which dairymen everywhere have been fighting. There has been also a bill up known as the Haugen bill, which prohibits the coloring of oleomargarine in imitation of butter. This we dairymen favor. Your secretary and president have drafted and sent under your president's signature, letters to all of our Missouri congressmen and senators, presenting our side of the question and asking their support of the Haugen bill. We received promises of support from several of our congressmen and courteous replies from all of them. We also sent letters and telegrams to influential dairymen and creamerymen in the State, telling them the bills were up and urging their immediate action.

It is claimed by some that the millionaire packer should be allowed to color his oleomargarine the same as the dairyman colors his butter. This statement upon its face seems reasonable. But let us see—let us look into the question. Butter is colored at certain seasons of the year when the cows are somewhat under artificial conditions of feed, in order to give it its natural June color and not for the purpose of defrauding someone into believing he is getting a different and better article. No one is ever deceived or defrauded by this coloring. On the other hand, oleomargarine is colored yellow in imitation of butter in order to deceive someone into the belief that he is getting butter. Oleomargarine is made of tallow, lard and cottonseed oil, all of which they tell us are good, wholesome foods. But if you color this oleomargarine in imitation of butter, you allow the merchants, the boarding-house keepers and the hotel men to sell this product as butter, and thus enable the great packing trust to put upon the market a counterfeit article which the average man will not detect. If oleomargarine is such a fine food product, let it not masquerade as butter, but go upon the market the natural color of the oils it contains. Oleomargarine, they say, is wholesome, is cheap and is clean. Then why should they want to make it in imitation of a food that costs much more to produce? Simply in order to counterfeit that article and get a higher price for their counterfeit product. They make the great cry that they want to take the tax off of oleomargarine in order to reduce the high cost of living. Oleomargarine in its natural or uncolored state is bought by people who cannot afford butter, and in this form it is not taxed except nominally. In its uncolored form it can never be sold as butter. In its colored form the majority of people will be deceived and the packer or maker of oleo will reap the benefit. It can be shown that oleomargarine can be made for ten cents per pound; butter cannot be made for less than twenty-five cents. Now for the moment I grant the argument of the packers, that oleo is wholesome, clean and tastes like butter. Allow it to look like butter by being colored, and what will be the inevitable result? Farmers will then quit making butter and the packers will raise the price of oleomargarine.

Let each of these food products—yea, let all food products—be sold under their natural color without the right to imitate something they are not.

The great farming interests of this country and the consuming public have an equal grievance against this proposed iniquity, the Lever bill, and should cry to Heaven against its passage. The price not only of "liberty," but of success in our day is "eternal vigilance." Let us make up our minds not to sit down this year in an easy and satisfied content, too much immersed in our own personal business to take time for a broader outlook, but let us catch the spirit of the times and add to our "diligence in business," an alert and intelligent interest in all things pertaining to the "good of the whole," and a determination to "make good" the things that are necessary for that end.

THE DEVELOPMENT OF A DAIRY FARM.

(John Hosmer, Marshfield, Mo.)

I never before made an address before an audience of any kind. I am entirely inexperienced. This is unnecessary information as you will discover before I am through. Had I my friend Brandt's gift of gab, I could make a very creditable talk even if I did not know my subject. That's the advantage of being a "book farmer." However, I ought to know something about cows, for figuring on H. B. Gurler's basis, I have had twenty years' experience with an average of eighty cows, which is equal to one thousand and six hundred years with one cow. In that time even a blockhead ought to have absorbed some ideas.

Profits from dairying paid for this farm home.

It once was a common expression that "any fool could farm," but that is no longer true. It takes as much smartness to make a success of dairying as it does in any other line. The business will find use for all the brain power that any man can bring to bear upon it. Why, it takes more gray matter, more "white-horse sense" to be a cow keeper than it takes to be president of the Bank of Crescent—ask Mr. Lewis if it does not. In that capactiy, if in doubt, he merely says "No." The dairyman must decide and act upon a thousand and one little details; failing pastures worry him, rations that are economical must be figured out, or an off flavor in milk must be tracked down and corrected. He must be a good general farmer, a good buyer, a good salesman, a good business man, and in addition have a smattering of chemistry, bacteriology, pathology, veterinary science—and be a saint to boot, if he has the "hired man problem" to deal with. I don't want to discourage any fellow new to the game—he will get the rules as he plays his hand—but I do want the kickers against high butter prices to realize that the dairyman's lot is not always a bed of roses. Yet, in spite of all, it is interesting and broadening and its advent into a neighborhood brings better farm houses, better barns, better schools, better roads, more general civilization and for the village merchants things that are put on a cash basis.

Dairying is a business just as much so as any manufacturing plant. In it, two plus two results in four just as often as in other lines. The rules that govern a factory are just as applicable to it, for the dairy farm is a factory in which "Old Bossie" is an animated machine for the conversion of raw material into milk, butter or cheese, as the case may be. The farmer has a keener competition to meet than the ordinary factory, and he has no tariff to hide behind. He can't get together in a "gentlemen's agreement," for there are too many to hold the secret and think in unison. He has got to play the game "according to Hoyle." That means to meet competition by having, first, better cows—better machines; second, cheaper feeds—cheaper raw material.

Many a manufacturing plant has thrown on the scrapheap costly machinery simply because a newer machine would cheapen the manufactured article. That is what the dairyman does when he starts the process of weeding out his "boarders.' It's a losing game for him to keep a cow that does not pay for cost of feed or labor. Yet that is what hundreds of us are doing if we don't keep the milk scales and Babcock test in use. To appreciate the full significance of this, let us see what it means in dollars, taking two hypothetical herds from which to get our data. There are quite a number of cows up around the thousand-pound mark, while the average for the State is not far above one hundred and fifty pounds a year:

One hundred cows making 1,000 pounds per year equals 100,000 pounds, at 30 cents, $30,000.

One hundred cows making 150 pounds per year equals 15,000 pounds, at 30 cents, $4,500.

This graphically shows a difference in favor of the better machines of $25,500. Now, I know of mighty few farmers who can turn up their noses at that sum. Let us say it takes $30 a year to keep the 150-pound "critter" and three times that sum, or $90, to maintain the 1,000-pound blue-blooded and we still are something like $20,000 better off. The difference is probably greater. The 150-pound fellow is a shiftless cuss and does well to get 30 cents per pound for his "salve," while the 1,000 gentleman works his head and gets 35, maybe 40 cents for his golden ingots. The Lord certainly has a weakness for helping those who help themselves. If as a dairyman you have not the sense to appreciate the significance of this better machine matter, you had better shut up shop and quit, for that will be the final result of your competition with the fellow who does. Consumers now are howling against high prices. It is out of the question to try to force them any higher, so your margin of profit must come from the better cows and cheaper raw material.

In cheapening his raw material the modern farmer has a wide field in which to exercise his skill and judgment. Here he has an advantage over the industrial factory, in that he can produce his own raw material. It involves improved cultural methods in the field, handier barn arrangements, better sanitary conditions for the cows, and economically compounded grain rations. The silo, alfalfa hay and cottonseed meal for the Southerner, or linseed for the Northerner are the keys. With these, the dairyman can practically dispense with the high-priced bran, of which he has bought so much in the past. I know personally of several dairymen near me who now, since putting up silos, have, by the use of small amounts of cottonseed meal, dispensed with bran, cheapened their rations and are getting better results than formerly. It is a case of putting up a silo or being put out of business by competition. It is no longer a time for discussion but a time for action. A cut of five cents per day on the ration for a cow is not too much for some of us. In a herd of 100 cows it means $5 per day, $1,825 per year. I can't stand that loss, can you? Dairying is like the packing industry, in that it is the little savings which combine to put the balance on the good side of the ledger.

Prof. Brandt has suggested that I be egotistical and talk about myself. It's the best thing I know of to talk about, but I doubt if it will be the most profitable to you. The Hosmer dairy farm has been held up as being the very epitome of all that is good in dairy work. Now I know it has fallen short of the possible perfection. Fifteen years ago its barns were up-to-date. But time moves on and improvements that are fine today are obsolete tomorrow. However, the working conditions are fair for the cows, and dollars say that they know it. All the credit for the showing made must by rights go to my father. A good, hard-headed New England Yankee brought up near Boston, where the manure clear for truck patches was ample reward for keeping cows. Such training made my father a martinet in the careful saving of all soil fertility. The business training in a hardware store for years made him quick to see what ought to be done, so after a disastrous experience in a Western Kansas boom—where he got health but lost money—he took up farming on four hundred acres of the poorest land in Webster county. A good medical friend remarked that he had gone out there to starve. The farm was on the historic "wire road" that stood the traffic—freight and passenger—when the Frisco ended at Rolla.

For years a stage coach stand was maintained on the farm, and everything grown systematically carried off. The soil was absolutely devoid of plant food and humus. With such a condition before him, he realized that stock with the resultant manure was the only salvation. Mules first were taken up—buying mule colts—but not being a good judge of colthood he had a choice collection of runts—mine mules and cotton fellows—that did not bring the top prices. After this experience it was beef. While a little better, this did not pay as it might, for then good eight-months-old steers sold for $7 to $10. However, all this time the land was getting better and in casting about for profit in dollars and profit in increased fertility, dairying looked too good not to try. That was about twenty years ago. Then it required nerve to tackle such a game. There was not a separator in the county, not a manure spreader, not a barrel churn bigger than a water bucket, and a cow keeper looked about as good as a sheep herder does to a western cattleman. Since then rapid strides have been made, so much so that now the farmer who goes to town without a cream can in his vehicle is a pretty worthless sort of a fellow. I have been told many times that my father's demonstration of the profits of cow keeping started the ball rolling in Webster county, at least. Perhaps the secret of his success as a demonstrator lay in the fact that everything done, everything accomplished, was intensely practical in its character. That was the Yankee in him cropping out. There was nothing sensational attempted and no millionaire fads taken up. The thing contemplated must be sure to pay or it was not started. Old, unhandy, dilapidated barns were used until the cows provided better quarters for themselves. His work proved that while fine showy stables were nice, they were not necessary to success—that brains and good judgment, mixed with the rations and care, were worth far more. That, I take it, is the secret of the whole matter. I know and you know of visionary, impractical fellows who, with the United States mint and metal furnished, would still go bankrupt in ninety days.

My father claimed that no breed of cattle had a monopoly of the milk-making function, and that of all scrubs the registered scrub was the worst. The value of a cow, for him, depended upon her individuality—her skill in getting the feed in the milk pail. His start was made with native Shorthorns of nondescript breeding. They were not finished butter machines but were fair milkers, handicapped, however, with an irresistible desire to quit work after about six months. This, in time, was gradually improved, and by weeding and by the use of good bulls, the average for eighty head was brought up around three hundred and forty pounds per cow per year, and the farm profits from little to $4,000 to $7,500, depending on the season. The dairy paid from the start; at no time was it a losing game. All this time the thing that pleased most was the gradually increasing richness of the soil. Father figured that in buying and utilizing the western brand he was virtually buying and transferring their farms. On the farm he was just as farsighted. While the neighbors rolled the rocks about two or three times each successive season, he got rid of them finally by putting them into walls or along the creek. While the majority used only timothy and cut late, he used clover and cut early, for the station analysis told that in the middle bloom clover was at its best. It was the practice to let it sun-scald and he got it in in such a condition that it was palatable and bright at feeding time. He was a pioneer all along the line—owned the first separator, first spreader, first hay loader, first tedder, first side-delivery rake and the first silo.

The dairy was started primarily for the building up of the soil. It did that and more; it built the best farm house and the best barns in the county and bought the best machinery. It was a public benefaction, in that it made two blades grow where there was previously only one. In attaining these results times were passed through when the clouds did not show their silver lining. There were occasions that would have taxed the patience of Job, but with the heart in the work we were buoyed up with the feeling that we were doing just as noble work as was the fellow in the counting-house or factory. We felt just as big as the dandy on the corner, with his white hands, his $50 tailor-made suit and his 10-cent bank account. All that was essential to success was good judgment, a backbone as strong as the eternal hills and a desire for something better. Here, as elsewhere, fortune is not the blind, irresponsible dame she is sometimes called. She rewards pluck, perseverance, energy and common sense. She does not ask a man who his father was, or if he came over in the Mayflower. She asks: are you patient, can you work, can you give up wearing good clothes, can you put on a mud-bespattered shirt and a pair of high-topped rubber boots? If he answers "yes," she proceeds to test him. She lets the rain beat upon him at his work, she lets the sun wither his pastures and the winter's cold shrink his yield of milk, and then, if he makes good, she rewards him a thousandfold.

THE COMMERCIAL IMPORTANCE OF THE DAIRY INDUSTRY.

(C. W. Kent, Kansas City.)

A few years ago this country became very much excited over the subject of free and unlimited coinage of silver. In fact, so much so that many good men were somewhat doubtful as to whether the country could continue to exist if this subject were not disposed of in the proper way.

But really, the importance of the situation was greatly overestimated. The entire production of silver for the past sixteen years, or from the time of its spectacular entrance into American politics to the present time, would amount to less than three-fourths of the dairy crop of 1912, while if we take last year's production of silver, it is so insignificant in comparison with our business as to be almost unnoticeable; yet the daily papers have much to say about our gold and silver output. The fact of the matter is that the total production of silver in the United States in 1912 was less than one-half the value of the dairy products of either Iowa, Illinois, Minnesota or Wisconsin, for the same period. Gold is something with which most of us have little acquaintance, but its production in 1912 amounts to only ten per cent more than the dairy products of any of the above-named states in 1912. Yet the slightest decrease in the production of the metals is sufficient to obtain considerable mention in our daily press.

Why is the public so densely ignorant of the tremendous importance of the dairy industry? Why is it that a product whose value is greater than any other farm product, with the possible exception of one or two, should even need protection from our own government? And yet (if you will pardon a slight digression), only about three weeks ago the committee on agriculture was evenly divided as to whether it should vote to continue the prosperity of 10,000,000 dairymen, or whether it should vote in the interest of 35 manufacturers of an imitation product whose only object is to sell a counterfeit for the genuine. Do you suppose these congressmen would hesitate one minute to vote in the interest of the producer and consumer of dairy products if they had any conception of what might happen if the dairy forces were organized and represented as they ought to be?

Coming a little closer home, I understand that from 50 cents to $1.50 is the limit our own Legislature will go when it comes to dairy appropriations. Yet these members of our Legislature ought to and must know that there is no state in the Union for which the dairy industry can do more than for the State of Missouri.

I am inclined to believe that we are to blame to a certain extent for the apathy which prevails in the minds of the public with reference to our business. If we are, let's get busy. We should be in a position to get appropriations commensurate with the size of the work to be done. It ought to be possible to go to Jefferson City and with a reasonable effort secure $50,000, $75,000, or even $100,000 to carry on the work of dairy instruction in this State. The returns from such an amount of money would be immense. The Department of Agriculture at Washington is at the present time interested in organizing counties so that instructors may be sent out. It seems to me that this Association might be able to work in connection with the State Board, selecting men for such associations in Missouri, believing that the dairy industry is of special importance. I have convinced myself that the public needs to be enlightened on this subject, and I am quite sure that some inquiry into the business from our standpoint is in order.

A manufacturer in any line of business, if he be successful, must know what it costs to produce the article he makes. He has a very elaborate cost system, showing the items which enter into the various departments, and if he did not keep these detailed accounts he would not remain in business a great while. Just why the producer of an article so valuable as butterfat should allow his business to run without any idea at all of the cost of the article which he produces, is the peculiar thing about the dairy industry. There are a few men interested in the production of milk and butter fat who can tell you very closely what their product is worth from a production standpoint, but they are very few. The average man does not know whether it costs ten, twenty or forty cents to produce a pound of butter fat. He observes the price paid for his product very closely; he complains bitterly if the price declines a cent or two per pound, but he does not seem to realize that he could reduce the cost of production five, seven, or possibly ten cents on each pound by doing a few very simple things.

The commercial importance of the dairy industry consequently has suffered in a great degree from the manner in which the business has been handled. There probably is no other business that could survive under such treatment. There probably is no other business that has done as much for the poor man and rich man alike, and yet it gets little credit. In the great majority of cases the business is handled as a side line, as it were—handled only, in many instances, because it is necessary in order to get enough money to make ends meet.

The commercial importance of this business could be doubled without increasing the number of cows manufacturing the product at the present time, by intelligent and careful handling on the part of their owners. This doubling of the revenue derived from this industry is almost possible without the addition of any more investment. It is almost possible to do this simply by providing better feed, giving the animals better care, and marketing the product when prices are most favorable. Strange as it may seem, 75 per cent of the total product of this industry in this section, marketed in the shape of butter, is sold during a time when sales have to be made at a figure something like eight or ten cents less than the prices prevailing during the other six months of the year.

I am mentioning butter because it represents more than two-thirds of the total of dairy products. A more general disposition toward winter milking would mean a better average price for the year and a better flow of milk. Thousands of dollars in Missouri alone are lost to the producers each year on account of the tendency toward summer dairying. A still larger amount is lost on account of poor quality. This condition not only means the loss of a great amount of revenue in the price alone, but it means extra help on the farm, extra care of the cream during a season when every precaution is necessary in order to produce a commercial product, and it means that this business or the business of general farming in many cases must be neglected.

To make our industry of the importance which seems possible, a great many changes are necessary. First of all, there must be some plan devised on each farm whereby the product of each cow will be weighed and tested and credited to her. Against this must appear feed, care and other incidental expense, so that at the end of a year, or possibly a less time, the farmer will know what animals in his herd are profitable and those that are unprofitable; not forgetting, of course, to take into consideration the various by-products which make up a considerable portion of the revenue. It seems to have been possible for the average man to go along and run his farm and milk his cows, regardless of whether the business is profitable or not, but it occurs to me that with the increased price of help and the increased price of land, the man who engages in a business of such importance as the dairy business must know something about the work that he is doing. He must provide some system of feeding whereby the cost is greatly lessened. He must provide warm and comfortable quarters, especially during the winter time, so that his cows can produce the maximum amount of milk. We are too apt to feel satisfied with our check at the end of the week or at the end of the month, and we do not take the necessary steps to find out what it has cost us to get that check.

In estimating the value of the business, little account is taken of many things which are directly traceable to the industry. For instance, when we raise corn or wheat the depreciation on the land averages from 5 to 10 per cent per year, and it is only a question of time until all the fertility is gone if we keep on growing wheat or corn. When we dairy we enrich the land from year to year and increase our wealth in many ways. A fact that has been repeated many times—that a ton of butter, now worth about $700, can be produced at an expense of 50 cents to the soil—is something of vital importance. Had the people in the northeastern part of the United States known this fact and applied it in a practical way, it would not be possible at the present time to buy farms well improved for less money than the improvements cost. They would still have farms that were productive, and they could still make a living without having to sell these farms and move on farther west and continue to deplete the fertility of the land they cultivate.

Some people are prone to believe that there might be an overproduction if everyone operated his dairy in the proper way, but there is not much likelihood of such a thing happening. Today there is a great scarcity of all dairy products. The consumption of butter, cheese, milk, cream and ice cream is increasing rapidly. The cost of high living is causing people to think more about the food value of what they buy, and they are beginning to realize that there is economy in using dairy products.

In estimating the amount of money which the products of this industry are worth in a year's time, it is very hard to secure even a fairly accurate estimate, because no allowance is made for the amount consumed on the farm, the by-products are varied and the indirect benefits derived are of tremendous consequence. The advance sheets of reports of the Secretary of Agriculture contain these words: "The dairy cow is one of the principal producers of wealth on the farm, although the cow is not prominent in public notice. The total value of dairy products for the year 1912 is $830,000,000. This amount exceeds the value of the cotton and lint crop, and is nearly as large as the total value of the lint and seed. The products of the dairy cow are worth nearly as much as the value of the hay crop, twice the value of the oat crop, and 25 per cent more than the total wheat crop. In fact, it is safe to say that possibly corn is the only crop produced on the farm that has a greater value than the total product of the cow."

The products of the dairies of Wisconsin alone totaled more than $85,000,000 in the year 1911. Other more prominent dairy states report figures amounting to tremendous sums. All we have to do to make Missouri compare favorably with any state is to wake up to the possibilities which are here. All we need is more knowledge, better system and a full head of steam all the time.

PROTECT THE DAIRY COW, THE BEST MACHINE ON THE FARM.

(W. W. Marple, Chicago.)

Two men started out one night in a strange city to rob a house. They finally came to an imposing-looking residence and decided that would be a good place to make a start, and the arrangement was that one of them should stand guard while the other went in to see what he could find. It was long after midnight. The night was dark and everything was still when the robber quietly slipped up to the front door and with a skeleton key opened it and started upstairs. When he got about halfway up a woman's stentorian voice called out and said: "John, go back downstairs and clean your feet! Coming home all times of the night with muddy shoes, tracking up the carpet. I'm tired of it and ain't going to have it." The robber turned around and slipped downstairs and went out to where his partner was and said to him: "I can't rob that house, it's too much like home."

When I heard a voice from Missouri asking me to deliver an address on this occasion, I couldn't refuse because it was too much like home, for I am proud to confess to you tonight, that notwithstanding my lot has been cast in another land and I am pleased to say, among pleasant people and with pleasant surroundings, I am like the old lady who, during the war, met a company of soldiers and they asked her if she was Union. She said, "No." Then they asked her if she was Confederate. She promptly answered, "No." They then asked her what she was and she said: "I'm a Baptist and have been all my life." I'm a Missourian and have been all my life.

For nearly twenty years the burden of my song has been, "The Dairy Cow." She has been prominent in my thoughts by day and in my dreams by night. I have had the pleasure of introducing her on the cattle plains of the west and the coal fields and tanbark districts of the east, in the wheatfields of the north and the cotton fields of the sunny south. I have been permitted to chaperon her in cattle conventions, associations of bankers, good roads assemblies, farmers' institutes, grange meetings and women's clubs. I have made her the subject of toasts at banquets where society worshipped at the shrine of fashion, and I have admired her in her humble home.

I have sung her praises for what she has done and for her fidelity in the performance of her God-given mission. I have extolled her virtues as the mother of her own family and the foster mother of a large proportion of the human family. I have discussed her and presented her claims to distinguished audiences as the queen of wealth producers, the world's best market for forage and grain, the forerunner and foundation of prosperity, as a refiner of thought and sentiment among men, a life-saver, a home provider, a soil builder, a vote getter, a bank depositor, and the one indispensable member of the animal kingdom. This, though, is the first time I have attempted to introduce her to an intelligent audience as a machine.

Webster says that a machine is any contrivance to increase and regulate motive power, one who acts mechanically or at the bidding of another. Someone has said, "A rose by any other name would smell just as sweet." So upon this hypothesis we will presume that a cow by any other name would be just as useful, and with that understanding we will discuss her today from the standpoint of a machine. It is evident from the definition of machine as given by Webster there are two general kinds, one animate, the other inanimate, and the man who attempted to milk a kicking cow without tying her legs together or was careless and thoughtless enough to wave a red flag in front of her, or her brother, will agree with me that she belongs to the animate class of machinery, for in the one instance he would have acted mechanically at the bidding of another when he was kicked off the stool (in which case he would be the machine), while in the other instance she would get into the machine class by increasing and regulating his motive power, as in the case of the boy and his sister crossing a cow pasture when a bull was attracted by a red jacket worn by the little girl and he started after them full tilt. The boy and girl, holding each others hands, ran for their lives. The bull was gaining on them and the little girl said to her brother, "You must pray or we will be killed." The boy said "I can't think of any prayer." She said, "You must say something." So he said, "The only thing I can think of is papa's blessing." So the sister said, "Say that," and when they were within a few yards of the fence where they could crawl under and the bull was almost on them, the boy said, "Oh, Lord, make us thankful for what we are about to receive"—and they slid under the fence.

The word machine opens up a train of thought almost infinite in its scope and brings to view an aggregation that because of the boundless space it occupies actually makes our minds tired, for the world is full of machines, animate and inanimate, and I deem it unnecessary to say that all of the animate machines are not cows.

Among those that are inanimate are electrical, gas, steam, gasoline, water, wind, and those names indicate the different motive powers which are increased through contrivances that are particularly adapted to each one of these forms and these contrivances are called machines.

There is a marked difference in the increase of inanimate machines of the same characteristics and human machines. One is prevented by the protecting arm of the government through the issuance of a patent. The other through a growing disposition toward race suicide. On the subject of inanimate machinery there are indications that the world has gone mad, and while the opposite seems to be true with reference to human machines, it is the exception they say that proves the rule, and I think I can endorse the opinion of the preacher's boy, who was one of a family of nine children. One morning he was taken into his mother's room to welcome the advent of the tenth. After looking at it for awhile, his father says, "What do you think of it?" He immediately replied, "I can think of a good many things we need worse."

The laborer is a machine doing the bidding of the overseer. The clerk is a machine doing the bidding of the proprietor. The mechanic is a machine doing the bidding of the builder. The machinist is a machine doing the bidding of the foreman. The fireman is a machine doing the bidding of the chief. The politician is a machine doing the bidding of his constituents. The lawyer is a machine doing the bidding of his clients. The preacher, who stands in the sacred pulpit as a messenger of the Most High, alas! is too often a machine doing the bidding of his most wealthy parishioners.

The machines that have been attracting the most attention for the past few months have been political machines. These were great massive and powerful national machines and each one of them like the great engine that furnishes the power for a lot of smaller machines, they furnished the power for state and county and township and president machines. Two of these machines are now laid up for repairs notwithstanding one of them was a brand-new one.

Some machines are retarded and lose a race on account of a puncture, but the universal verdict was that it had no effect in the case of one of these political machines. Some machines wear out and break because of friction caused by lack of oil, and it has been intimated that one of these machines lost in the race because of a scarcity of oil caused by the dissolution of the Standard Oil Trust. The accumulation of rust incident to being out of use for a long time is always hard on a machine and generally unfits it for use, but the machine that outdistanced all others in the great November race gave every evidence of being in perfect condition, notwithstanding the long years since it had been in anything like constant use, and this only goes to show how the life of a machine can be preserved and extended by protecting it from the storm when it is not in use and by keeping it well oiled, rubbing off the rust spots when they appear. It also proves what may be accomplished in results by patience and perseverance.

The usefulness of a machine depends first on its perfect construction with reference to the purpose for which it is intended; next is its care and manipulation. A threshing machine must have teeth and a cylinder, a corn sheller or clover huller must be so constructed as to scrape the corn off the cob or get the little seed out of the hull. The ensilage cutter and the reaper and the mowing machine and the corn cutter must have knives or they are useless. The kind of lumber for the casing or the color of the paint is not important, but the other things are essential.

The steam engine must have a steam box and piston rods and a governor. The color makes no difference. But there are certain essentials to be regarded and that must be provided, or the engine is useless. A watch must have springs and wheels. It's no good without them. The case may be brass or nickle or silver or gold or tin, or it may be without case, and if the wheels and springs are good, the watch will perform its mission.

I might go on and enumerate machines and essentials to each till I was black in the face, but this is sufficient for a comparison. These machines are made with certain capacities and run at certain speed and in their operation this must be considered. A threshing machine with a maximum capacity of 500 bushels per day when properly run, might by increased speed increase the capacity a little temporarily, but it would be dangerous and certainly shorten the life of the machine. The pinions and axles of this machine must be kept oiled, or they will soon go to rack. The machine must be kept clean and you will never get wheat from it by feeding timothy. Alfalfa fed into a clover huller will not bring clover seed. It is self-evident that you will get from the machine exactly what you feed into it and the mission of the machine is to change its form.

The dairy cow, as a machine, is in many respects similar to other machines. It's my understanding they now have machines that cut wheat and thresh it and sack it all at the same time, and I suppose later they will attach to the reaper a mill and the wheat will be taken in the straw and converted by a combined cutting, threshing, grinding, sacking machine into flour ready for market.

The dairy cow is an intricate piece of machinery. She takes wheat in the straw, or oats, or rye, and threshes it into milk. She takes corn and fodder and by putting it through the same process she makes, not ensilage, nor shredded fodder, nor meal, but milk.

Did you ever go into a glass factory and see them throwing sand into a hopper at one end of the building and follow it to the other to find it in the shape of fruit jars nicely packed for shipping? Have you ever visited a woolen factory and seen wool started on a machine and followed it to where it comes out beautiful cloth? The fruit jar is sand in different form; the cloth is wool in different form, and this is all done by machines made by humans.

The dairy cow, whose machinery is more elaborate, more intricate, more delicate and more useful, was provided by nature and makes the most wonderful transformation of any machine. A dairy cow is created with a maximum capacity, the same as a threshing machine. The only difference is, you can determine that of the threshing machine at once; of the cow, you can't. A man would be examined for insanity, who refused to pay for a threshing machine that had been sold for a 500-bushel per day machine and he tested it by running through 250 bushels, and then running the straw through again, expecting to get 500 bushels. The same condition, in a general way, exists with the cow. To produce milk she must have the material that contains milk, just as the threshing machine must have straw with wheat in it in order to produce wheat, and she must have the quantity in order to reach the maximum.

Abraham Lincoln said that near his old home in an early day there was a river on which a steamboat run, and it had a very small boiler and a very large whistle, so when they blew the whistle they had to shut down the engine. There are some cows that are being used for dairy purposes that are constructed wrong. They lack capacity. A threshing machine the size of an ordinary corn sheller would be unprofitable because you haven't room to store sufficient straw with wheat in it to get enough to pay; so the cow with insufficient paunch to store away material enough to make large quantity of milk is an unprofitable machine because of her construction.

The centrifugal separator is a wonderful piece of machinery and was a great acquisition to the dairyman's equipment, but one that throws part of the butter fat into the skim milk is unsatisfactory, notwithstanding the hogs that drink it are valuable. So the cow that is being used for dairy purposes is unsatisfactory if she diverts a large portion of milk-producing food to the manufacturer of beef.

The old-time prospector for gold used to wash it out from the other material with which it was mixed, but with his crude apparatus much of the precious metal contained in the sand was washed away and wasted, but with modern equipment and machinery, it is all saved and the only machine that is satisfactory is one that saves every grain and speck of it. So the cow that doesn't convert her feed into milk or beef, but much of it into waste, is unprofitable and should be replaced with the cow that saves it all for milk.

One of the first things a man does when he buys a machine is to examine it carefully, take it to pieces and study it thoroughly, and acquaint himself with its construction and its needs. So, in discussing this wonderful piece of mechanism and presenting her claims as a machine, it might be considered essential to analyze her, but I deem it inexpedient because this has been done so often, I fear I might be like the preacher, who on his way to an appointment got soaking wet and when he arrived he said to one of the deacons, "I'm afraid I'm too wet to preach," and the deacon replied: "Oh, that's all right, you'll be dry enough when you get into the pulpit."

Have you ever stood and viewed with awe a mighty engine as with perfect precision and regular strokes it moved the machinery of a great manufacturing institution and did it impress you, as it performed its wonderful mission, as being almost human? Have you ever stood on the platform of a union station and watched an approaching train and seen the man in the tower pull a lever that directed it on the right track, and did you ever get tired of looking at that wonderful iron horse as it came puffing and blowing and snorting into the station with its load of human freight? Isn't it wonderful? Did you ever stand at twilight in a city and see the lights begin to glimmer and grow brighter and brighter, and did you realize that the effect was produced by a powerful machine under the control and direction of a human machine, and when you have considered that all of these wonderful machines were conceived in the minds and made with the hands of human machines?

The estimate of the value of a machine, as indicated by the care taken of it, is not high oftentimes, and it would seem that in many instances poor judgment was displayed.

A man will take a five-dollar watch and give it the best of care for he realizes that it is necessary in order to get good service out of it, while he will expose a $75 cream separator to all kinds of unreasonable exposures and blame the manufacturer for any failure to get the best results. When we see plows and harrows and rakes and mowing machines and reapers and threshing machines and all kinds of farm implements standing out all winter, exposed to all kinds of weather, we are not surprised that this greatest of all machines on the farm, the dairy cow, is in many instances unprotected.

When you have become convinced of the inestimable value of the dairy cow as a machine and realize how delicate and intricate a piece of machinery she is and realize what it costs to abuse her, then her care and support will regulate itself, for it will become a business proposition. The man who thinks it is economy to feed his cow the cheapest feed and provide for her the cheapest place, and who constantly shocks her sensitive nature by loud talking and abusive language, will find there is nothing in it.

For a half a century she has stood at your door and offered the highest price for grain of any market, and she is only a machine.

This wonderful, moving, living, breathing, active piece of mechanism commenced her mission at Plymouth Rock, and tied behind the dust-covered emigrant wagon she has followed man to the setting sun. She endured all of the hardships of the pioneer and on her march she picked the straws that blew her way and converted them into milk to fill the breast of her who rocked the cradle and fed the babe, and she is only a machine. When the grasshoppers and the hot winds and the chinch bugs and hail storms and cyclones destroyed the crops in Kansas and Nebraska, she chased the Russian thistle and from it she manufactured the highest-priced commodity from the farm and made it possible for the early settler to stay, turning adversity into prosperity, appeasing hunger, changing discontent to content—and she is only a machine. When the wheat crop of Wisconsin and Minnesota failed and the farms were mortgaged and father and mother, whose children were scattered, bowed down with the weight of years, looked back over years of toil and trembled as they contemplated losing their home, it was then this queen of mortgage lifters, the dairy cow, held out the olive branch. It was accepted and the mortgage was paid. The home was saved, misery was turned into happiness and as the smoke from the burning mortgages ascended to Heaven, Wisconsin swore allegiance to the dairy cow, and she is only a machine.

When the poor emaciated victim of disease was tossing on the bed of pain, hovering near the brink of death's dark stream, this noble animal stood in dumb anxiety at the hospital door and offered the elixir of life, the restorer of health, and saved a human life—and she is only a machine.

She wended her way to the orphan's home and saved the motherless babe, whose mother had gone to that land from which no traveler ever returns. She is only a machine, but if from all the languages of earth I could choose the choicest words and weave them into garlands of praise, I could but faintly express the debt we owe her.

RESULTS OF THE MISSOURI STATE DAIRY ASSOCIATION BUTTER-SCORING CONTEST, JANUARY 16, 1913,

Three prizes of $15, $10 and $5 were awarded for highest scoring butter. L. G. Rinkle, assistant professor of dairy husbandry, University of Missouri, reports as follows:

Sweet Springs Creamery Co., Sedalia, Missouri	92
Macon Creamery Co., Macon, Missouri	91½
Marionville Creamery Co., Marionville, Missouri	90¾
Western Dairy Co., St. Joseph, Missouri	90½
Mountain Grove Creamery Co., Mountain Grove, Missouri	90
Pierce City Creamery Co., Pierce City, Missouri	90
Lebanon Creamery Co., Lebanon, Missouri	90
Carthage Creamery Co., Carthage, Missouri	89
Billings Creamery Co., Billings, Missouri	88½

Missouri Sheep Breeders' and Feeders' Association.

OFFICERS.

President—E. B. Wilson, Stanberry.
Vice-President—J. A. Foote, Oasis, Southwest District.
Vice-President—Lyle Atkins, Denton, Northeast District.
Vice-President—T. E. Atkins, Columbia, Central District.
Secretary-Treasurer—Howard Hackedorn, Columbia.

REPORT OF SECRETARY.

The Missouri Sheep Breeders' Association held a called meeting at Columbia, Mo., January 15th and 16th. The members present voted to reorganize the association, enlarging its field to include the Missouri sheep feeders, as the sheep-feeding interests in this State are an important factor in sheep husbandry, and the common interests of the breeder and feeder brings them together. The large number of people interested in mutton and lamb production makes it necessary to have a strong and effective organization to secure such protective measures as is thought necessary by the members.

A law against dogs, dogs causing endless trouble to many sheep raisers, was ably discussed by M. V. Carroll of Pettis county, and who was former secretary of the association. He told of the trouble in getting the former dog law through the Legislature and how it had then been killed in the lower courts, money being lacking to carry it to the Supreme Court.

Geo. B. Ellis called the meeting together and told of the large sheep feeding and breeding interests in the State, pointing out the fact that there are more sheep in Missouri than any of the adjoining states. He emphasized the importance of a strong organization to protect the interests of the members.

In a general discussion on marketing of wool, S. P. Emmons of Mexico presented the buyer's side, stating how some dishonest producers would use a pound to one-and-a-half-pounds of twine to the fleece, and how tags, filth and scrapings from the shearing floor are tied in the center of the fleece, all of which causes great loss to the buyer.

A general discussion on the care of breeding ewes brought out many interesting problems. The work of the Experiment Station in feeding breeding ewes on rations made up of corn stover, clover hay and silage singly and in combination with and without grain was discussed.

At the business meeting the following officers were elected: President, E. B. Wilson, Stanberry; Vice-President, J. A. Foote, Oasis, Southwest District; Vice-President, Lyle Atkins, Denton, Northeast District; Vice-President, T. E. Atkins, Columbia, Central District; Secretary-Treasurer, Howard Hackedorn, Columbia.

Arrangements were started for a big meeting at Columbia next Farmers' Week. The association voted to co-operate with the Missouri Cattle, Swine and Sheep Feeders' Association in all matters that seemed advisable.

Resolutions endorsing H. J. Waters, president of Kansas Agricultural College, as Secretary of Agriculture for the United States; also a resolution urging the State Legislature to support the College of Agriculture, and especially the animal husbandry department, were unanimously adopted.

CONSTITUTION AND BY-LAWS.

The Missouri Sheep Breeders' Association, formed at Sedalia, Mo., October 9, 1907, adopted the following constitution:

PREAMBLE.

We, the sheep breeders of Missouri, for mutual protection, profit and pleasure and to unite our strength for the betterment of the sheep industry, do adopt the following:

CONSTITUTION.

Article I. *Name.*—The name of this organization shall be The Missouri Sheep Breeders' Association.

Article II. *Object.*—The object of this association shall be to encourage and assist in the production of "more and better sheep for Missouri," and provide legislative enactments for the protection of the same.

Article III. *Membership.*—Any person who is engaged in sheep raising, or who is in sympathy with the flockmasters of the State, and who will conform to the requirements of the constitution and by-laws of the association, may become a member by the payment of the fee prescribed by the by-laws.

Article IV. *Officers.*—The officers of the association shall be a president, vice-president and secretary-treasurer, who shall each hold office for one year, or until their successors are elected; also, a board of directors, composed of six members, three of whom shall be selected from north of the Missouri river and three south of said river: Provided, that in the selection of the first board of directors, as contemplated herein, two shall be elected for one year, two for two years and two for three years, and, thereafter, at each annual meeting, two directors shall be elected for a term of three years; and provided further, that the president, vice-president and secretary-treasurer shall be ex officio members of the board of directors.

BY-LAWS.

Section 1. *Annual Meeting.*—The annual meeting of the association shall be held in Sedalia on Wednesday of the week of the State Fair, at which time the officers shall be elected by majority vote of the members present.

Sec. 2. *Directors' Meeting.*—The board of directors shall meet annually on Tuesday previous to the day of the annual meeting, and may hold such other meetings as they may deem necessary.

Sec. 3. *Dues of Members.*—The annual dues of each member shall be one dollar, payable during the month of the annual meeting, and any member who fails to pay said amount within thirty days after the adjournment of said meeting shall become suspended and remain so during his delinquency.

Sec. 4. *Membership Fee.*—The fee for membership in this association shall be one dollar, the payment of which shall entitle to the rights and privileges of membership for one year or until the annual meeting next succeeding the date of such payment. The money in the treasury from the annual dues is to be used as long as any is available, and in case more is needed a special assessment will be levied.

Sec. 5. *Duties of Officers.*—The president shall preside at all meetings of the association, and board of directors shall fill by appointment all vacancies that may occur between annual meetings, sign all official papers, and have general supervision over the business of the association, and shall receive such reasonable compensation for his services as the board of directors may determine.

Sec. 6. *Vice-President.*—In the absence or inability of the president to serve, the vice-president shall perform his duties, and while acting as president shall have all the power and same compensation as president.

Sec. 7. *Secretary-Treasurer.*—The secretary-treasurer shall keep a record of all the meetings of the association and board of directors, conduct all correspondence, give notice of special meetings, keep books of account with the members, receive and receipt for all money due from them, and shall deposit said money as instructed by the board of directors, and pay out the same on orders signed by the president, give such bond as the directors may require for the faithful performance of his duties, and shall make annual settlement with said board of directors at such time as they may designate, and a full report of the condition of the association at each annual meeting. As full compensation for his services he shall receive such amount as the board of directors may determine.

Sec. 8. *Amendments.*—This constitution and by-laws may be altered or amended at any annual or special meeting of the association by a majority of the members present concurring therein, notice of such proposed change having been given by publication at least thirty days prior to date of such meeting.

WORK AND HISTORY OF ASSOCIATION.

The association was kept together for the next year or two by an endeavor to have the State Legislature pass a dog law adequate to protect the great sheep industry of this State. But our Legislature seemed to think the dog industry more important than the sheep, as they refused to aid our sheep men in any way.

After this the members became scattered and little interest could be aroused. And at the 1911 and 1912 meeting it was hard to get half a dozen members together. The question before the association now is, shall it be dropped, or are you willing to get back of an association and help make it worth the while and a profit to all members?

SOME SUGGESTIONS.

Any association which does not benefit and profit its members cannot live long. By this plan we hope the association will be a benefit and profit to all the members.

A plan for the mutual protection of the members is successfully used by the Kentucky Sheep Breeders' Association: Any member having sheep killed by dogs will be reimbursed from the treasury of the association at an agreed rate per head.

By united effort of the sheepmen force enough could be brought to bear on our State Legislature to pass an adequate dog law for the protection of the sheepmen. The association will keep hammering away until such a law is passed.

For the benefit of the pure-bred sheep breeders and other sheepmen who wish to buy rams or sheep of any kind, a record of the number and kind of sheep each member has for sale will be kept in the secretary's office. By this system members will have an opportunity to exchange sires and dispose of their surplus stuff to the advantage and profit of both buyer and seller. This would be especially valuable to the breeder who would like to purchase an extra good ram, but does not feel justified in doing so, as he could only use him a year or two and would then have to sell him at mutton prices. By keeping a file in the secretary's office, members wishing to exchange rams, it would greatly facilitate members getting together and making exchanges.

By united effort of the breeders of the various breeds, pressure can be brought to bear on the different National record associations, to give to the Missouri State Fair premium money equal to that given at other state fairs of no greater importance. Also efforts will be made to increase the premium money in the Missouri special classes at the State Fair.

A movement will be started to establish a "Missouri futurity stake" for the different breeds of importance in this State at the State Fair. This would be of special importance to the breeders of pure breeds, as in this way enough premium money could be won to make it worth the while exhibiting.

The association could carry on advertisement in the leading sheep and agricultural papers for the benefit of its members who have bure breds and for sale. This would be of special interest to the breeders with small flocks; whose flock is not large enough to justify them carrying an advertisement. Inquiries to advertisements coming to the secretary would be answered by sending to such inquirer a list of the breeders in the association from whom he could obtain the breed of sheep he desired.

MUTTON PRODUCTION IN MISSOURI.

(Howard Hackedorn, Department of Animal Husbandry, Missouri College of Agriculture.)

The center of mutton production is now moving our way instead of west, as it has done since the beginning of this country. In colonial times, when the sheep were kept primarily for wool, the New England states and the rougher sections of this country east of the Allegheny mountains were the sheep sections. Nearly every farmer had his flock, for he depended upon it for his clothing. And with emigration westward the people took their flocks with them, and the Ohio and Mississippi valleys became the sheep countries of the day. But with the opening up of the range country, the center of our sheep industry moved west again. But it has gone to the limit in its western course and will slowly return east.

Champion Shropshire ram, Missouri State Fair, 1912. Bred and exhibited by University of Missouri.

The west will always be a big sheep country, but with the increase in population and the breaking up of the range country into farms, the sheep-herding industry will decrease. The flocks have been cut down and better care taken of them. The high prices of 1910 caused many sheep men to "cash in," many of them selling out entirely. The markets were full of wethers, and ewes of all kinds were plentiful. The common talk on the markets was that the west was "cleaning up" and the run would soon be over. But it held on all through 1911. "The bottom dropped out" and mutton was lower than it has been for the last twelve years. But the west still poured the sheep into the market hopper. Record receipts were made and the run continued into 1912. The west has been cleaning up, it is true, but not going out of the business. The general tone of the market seems to be that most of the surplus stock has been marketed. The better young breeding ewes have been kept back. The smaller flock insures better grazing and the big sheep companies are feeding hay through the winter, and more care is being taken to save a greater percentage of the lamb crop.

Not only the west has been cleaning up, but the corn-belt farmers have put a lot of their ewe flock "in the bank." The dry season of a year ago and high price of hay and grain forced many to sell or almost give away the ewe at whatever price they could get.

A glance at the market report for the thirteen principal markets for 1909-1910 shows an increase in sheep receipts of over 1,000,000, and for 1910-1911 another million increase, and the year 1912 shows a like increase. The number of sheep marketed was increased from 10,000,000 for 1909 to 13,000,000 for 1912, and from government statistics the number of sheep was decreased from 52,000,000 to about 50,000,000. Truly, the sheep business is getting on a stable basis. Another strong factor for the sheep industry is the fact that the American people are eating more and more mutton. The high prices of pork and beef forced many to look for a cheaper meat, and so mutton was used by many. The Americans have to be taught to cook and eat mutton, for pork and beef have been the most used products. The city people have learned the value of mutton and lamb, but the farmer uses very little of it. Why he does not is hard to understand. Pork is his standby in the meat line, but a little fresh lamb now and then makes a delightful change.

Missouri ranks as one of the foremost sheep states in the corn belt, as rightfully she should. The natural advantages of this State for the sheep business is unsurpassed by none. We have Kansas City and St. Joseph on our western border, and as we are in close touch with Omaha and Denver, so our opportunities for purchasing western feeding sheep, lambs and breeding ewes are of the best; while for the finished products we have the Kansas City Stock Yards, the National Stock Yards of East St. Louis and the Union Stock Yards of Chicago within easy reach. Our soil is rich and produces an abundance of feed. We have the great Ozark region, which will in time become a great sheep-breeding section. The grass and water is good, and the land not of prohibitive price for grazing purposes. And in the valleys enough corn and hay can be raised to finish the products.

In Central and North Missouri, sheep feeding is an important factor with many of the farmers. Especially popular is the practice of pasturing out the undergrowth in the cornfields. In most cases cowpeas are sown with the corn to furnish feed for the lambs. By some, the cowpeas are sown at the last cultivation of the corn, but unless the weather is exceptionally favorable the

Shropshire rams on rape pasture, University of Missouri, June, 1912.

cowpeas do not make a very good growth. On the station farm here we find it a better practice to delay corn planting a little and sow the peas with the corn, either mixing them with the corn, drilling the mixture, or, better still, using a special cowpea attachment on the planter, checking the corn and dropping about four peas to the hill of corn. The peas will bother some in the cultivation, but their value makes up for the bother. Fifty to sixty-pound western lambs are most commonly used to pasture off these peas. They will put on about 14 to 15 pounds up to 20 pounds gain in seventy-five to eighty days in the cornfields. During this time a single-deck carload of sheep will eat about fifty bushels of corn, and, of course, most of the leaves they can reach. By the middle to the last of November the lambs will need more feed than that which they obtain in the fields. As the frosts soon kill the cowpeas and the leaves all drop off, many farmers sell the lambs direct from the cornfield, while others prefer to feed them grain and hay, selling them later on in the winter. Just which would be best to do will always depend on the weight and amount of flesh the lambs are carrying and the condition of the market. This system of sheep feeding has become popular because of the low cost of production. Gains are made almost entirely off of what would otherwise go to waste, and a margin of one cent gives a fair profit in many cases, and good interest on the investment has been made on closer margins. The other sheep feeders buy in the fall and keep the sheep from ninety to one hundred days longer, feeding grain and hay, and in many cases, silage. But the uncertainty of the market has kept many farmers from doing this, especially since 1910, when feeder lambs were high and the "bottom dropped out of the market" about the time these lambs were ready to be sold.

Many of those who were caught in the fall are still raging against the sheep business, yet if they lose a corn crop they don't stop growing corn. But with all the uncertainty of the market, a flock of breeding ewes will nearly always pay good interest. During the last two years western ewes have been cheap and plentiful on the market, four dollars buying a good class of ewes. Cross these ewes with a good mutton ram, and by July 1st the lambs will bring as much as the ewes cost. The ewe's fleece will pay for her keep.

At the Experiment Station, Colorado western ewes that were bought on the Kansas City market, cost $3.60 per head laid down at Columbia. Lambs from these ewes brought $4.05 on the St. Louis market on July 8th. The ewes' fleeces brought on the average $1.33, which would pay for their feed.

Marketing the lambs in June or early July is in nearly every case the advisable thing to do. First, because the lambs will make little, if any, gain from July 1st to September 1st. From records kept here we find the lambs more often lose than gain in weight during the hot summer weather. Second, this system avoids the risk and trouble of stomach worms. Third, these lambs do not have to compete with the western lambs on the market, as they do not begin to come in until later; and with only native lambs on the market at this season of the year, a higher market usually prevails.

The idea of having ten or a dozen sheep around the farm to act as scavengers never has nor never will do the sheep industry any good. Not because sheep will not clean out the fence rows, and utilize odds and ends of waste pasture, but because the number of sheep and amount of money invested is too small for the average farmer to pay enough attention to them.

POINTS IN SHEEP FEEDING.

(Chester G. Starr, Centralia, Mo.)

Each succeeding year sees more farmers venturing into the sheep-feeding business as a means of converting their corn, oats, hay, grass or silage into some form of meat and as a means of retaining the fertility of their farms. The high prices demanded in recent years for stock and feeder cattle, the slight margin in the cattle business and the loss by cholera of the hogs following after the cattle, have turned quite a few cattle feeders away from their old love, and they have each fall bought more or less sheep. Most of us have one thing in common with the sheep—we all follow where one seems to have successfully gone, and as the sheep feeder, as a rule, has made money during the last ten years, every one is wishing to get into the business. There have been a lot of mistakes made, a lot of money lost and a lot of men are convinced that there is no money in "the blamed sheep."

To be a successful feeder requires more use of brains than any other line of agriculture. The man making a success is the one who has learned to think in sheep language and is on speaking terms with every lamb, yearling or wether in the feed lot. One good way to express the ability needed is by taking the men who are successful feeding hogs, divide them by two and you will have the successful cattlemen; again divide by two and you will have the successful sheepmen.

The farmer with brains and who is not afraid of using the said brains can make money handling sheep. A large amount of patience, sharp-sightedness, care and generosity is needed. No bunch of sheep can be hurried at anything, through a gate, upon feed or anything else. Only bad results come through hurry and noise. We once had a good feeder working for us, who was a good man with anything else than sheep, but he couldn't walk through the sheep lot without losing his temper and stirring the lambs up. We were forced to let him go just because of that inability to get along with the lambs. Always take plenty of time doing anything around the sheep pens. If you wish to drive them through a gate and they bunch up on you and begin to mill, don't yell your head off, but try to force a few of the leaders through and the rest will trail after.

The successful feeder must always be on the watch for things happening in the pens. A lamb may need docking, another is not getting enough feed because the wool has dropped down over his eyes so that he is blinded, still another may get his head caught in the hay rack and stay there all night. Sheep are the most helpless things on the farm and need constant attention.

Care in being punctual with the breakfast for the lambs will do wonders. If you make a practice to feed at eight o'clock in the morning, be sure that you don't feed at ten o'clock half of the time, The sheep appreciate punctuality as much as does your wife. You wouldn't think of coming in for dinner at eleven o'clock Monday, twelve Tuesday and one Wednesday. No one ever made fat sheep by stinting them feed. They will not fatten on a maintenance ration, and ought not to be asked to eat up all of the feed that nothing else on the farm will touch. The greatest trouble we have in feeding is to induce our partners and customers to feed plenty. A "corncrib cross" makes the best mutton, and nothing else should ever be attempted.

What kinds of sheep are most profitable? That depends upon the man, the feed, the feeding conditions, the prices and the time of year. A beginner will often make a better success with wethers or yearlings. Lambs require a lot of babying and sooner go to pieces with a little lack of care. The yearlings and wethers will take care of themselves better and can utilize more rough feed, such as fodder, stalk fields and the like. If the farmer desires to save labor in gathering corn by turning the sheep into the fields, yearlings and wethers will do a better job than lambs. If, on the other hand, he wishes to pick off the blades of the corn before they dry and to get rid of the weeds and grass along the sides of the field, lambs may do that job better, as they will not bother the corn as soon as older sheep. However, sooner or later, usually sooner, even lambs will begin to nibble the ears, and if the farmer feeder does not watch closely, he will lose a lot of the lambs through an overdose of green corn. Lambs really do the best in dry lots, when the feeding begins too late to use the green blades and grass. They have a disposition to wander and will not stay with the feed unless more or less closely confined. When dry-lot feeding is practiced, some kind of shelter is almost a necessity. It need not be expensive, just something to keep the sheep dry. If a sheep has a dry back, no degree of cold will affect him. We have had long-wooled lambs to lie on ice, melt through a bit and then freeze down so that they had to be chopped loose. It never affected them at all; on the other hand, they seemed to like it and thrived on the ice.

Sometimes yearlings are cheaper than lambs; sometimes the reverse is true. If the sheep are intended for shearing, a good shearing kind ought to be selected. A New Mexican lamb or yearling is the thing when high prices for mutton and quick finishing is desired, but either would be a bad one for the man who wanted to shear before selling.

The internal parasites which are found in almost all native sheep force almost all feeders to use western-bred sheep. In addition to the absence of internal parasites, the western sheep are more uniform in size, quality and feeding. They herd better and are more gentle. In selecting western feeders, good quality, open wool and ruggedness are the main points. The size and degree of fatness are minor. A large number of experienced feeders make good money with "pewee" lambs—those that are very small, but the average man had better let them alone, as they require a world of care and babying. Unless the feeder is experienced and is in shape to grind his feed, old ewes will be a source of money loss. Good 55 to 65-pound lambs and 60 to 75-pound yearlings are the best for the beginner. Too heavy stuff will be discriminated against when marketed, as the buyers like what they call "handy-weight" sheep—those which, when dressed, will present a neat, small carcass for the butcher to hang out. It seems true that the demand for mutton is governed quite largely by the display made by the small retail butchers. In cold weather the carcasses can be exposed for sale, but in mild weather mutton turns dark very soon when out of the cooler and is in less demand because of that fact. Of course, the larger percentage of yearlings masquerade as lambs when the skin is off and the legs break lamb joints. The American people have not developed much of an appetite for heavy mutton cuts. The lamb roast and cutlets are the favorites.

The feed used is really of less importance than the way it is used. Corn alone will fatten yearlings very nicely. There has been many a bunch fattened who have received nothing more than what they could glean from a cornfield—blades, husks and grain. In many cases it was the cheapest way to feed. Oats, corn and clover hay will fatten lambs nicely; in the absence of oats, corn and clover will do. Cottonseed meal is very useful, especially when silage is used. Alfalfa and cowpea hays are as valuable as clover. In the absence of any hay, sheep can be fed on silage, cottonseed meal and corn. About all of the feed can be varied or substituted, save corn. Plenty of corn is always needed. One great danger in feeding silage is the too free use of it, especially with lambs. If fed in too great quantities the lambs seem to grow too much and do not fatten as rapidly as they should. A pound of silage daily per head is about enough. This winter we overfed a bunch of lambs on silage; they did not gain as rapidly as they should and killed badly. By the way, there is no greater thing in marketing than the standard of your sheep.

Sheep in the Starr feed lots, Centralia, Mo.

If your sheep have a reputation of being fat and "killing good," the buyers will often offer five or ten cents more than for anything else and will buy the sheep as soon as they come in, saving you the shrink attendant to holding them all morning. It pays to play fair with the buyers. If you have a bunch of lambs that you think are not up to the standard, don't try to put one over on the buyers, as they will remember and get you the next time you come. It also puts your salesman in bad shape to help you on subsequent bands.

The water should always be fresh and clean; have plenty of it in enough troughs so that the sheep can easily drink. To be on the safe side, clean out the troughs often. Be sure that the water is in a well-lighted place, if you have it in a barn or shed. Sheep like to see what they are drinking just as you do. In cold weather keep the ice clear all day so that none will be turned away. If some cannot get water one day, they are apt to drink too much the next and get off of their feed because of that overabundance of water in their stomachs.

Enough troughs should be provided for the grain feeding, so that all can get all of the grain that they desire. With a small bunch enough troughs can be placed so that all can eat at once. With a bunch which numbers thousands this may be impossible, but enough should be on hand to allow sufficient room so that each sheep will have plenty of time some time during the day to eat all it desires. Any feed left in the troughs, as well as any refuse hay, should be carefully cleaned out each day. As sheep are the cleanest of all of our live stock, they demand and must have the cleanest feed. No moldy hay, grain or silage should ever be fed. Better results can always be obtained when the bands are small in number, one or two double decks, as more individual attention can be given. That is one reason why the small farmer-feeder can get better results than the larger operator.

The whole matter of success in sheep feeding hinges upon these things—an intelligent feeder, good care, good water, good feed and good buying. No one can make anything if one of these is absent. He can if all are present.

Missouri Saddle Horse Breeders' Association.

OFFICERS.

President—James A. Houchin, Jefferson City.
Vice-President—Paul Brown, St. Louis.
Treasurer—Wallace Estill, Estill.
Secretary—Rufus Jackson, Mexico.

PROCEEDINGS OF ANNUAL MEETING.

(Rufus Jackson, Secretary, Mexico.)

The annual meeting of the Missouri Saddle Horse Breeders' Association, held in connection with Farmers' Week, was called to order on the morning of January 16th by the president, James A. Houchin, Jefferson City, after which Rufus Jackson, secretary, called the roll of members. The minutes of the last meeting were then read and approved. The report of the treasurer was presented. This showed about $45 as belonging to the association. Fifty-three members paid their dues during the last year.

Rufus Jackson.

The secretary reported that following a suggestion of the president, he last year got in touch with the secretaries of the fair associations throughout Missouri and made a personal appeal, asking them to be as liberal as possible in the matter of premiums for saddle horses. Partially as a result of this work, more money was offered at the Missouri fairs for saddle horses last year than ever before. In fact, more than twice as much money was offered for saddle-horse premiums during the years 1911-12 than for the years 1907-08.

REX Mc DONALD 833
The World's Champion Saddle Stallion
Campaigned over ten years, challenging all comers, without defeat.
A horse more widely known and beloved of saddle horse admirers
than any that ever lived
He is the sire and grand sire and great grand sire of champions.
The Grandest Saddle Stallion the World has known.
Owned and ridden by B.R. Middleton. Mexico, Mo

A resolution endorsing President H. J. Waters as National Secretary of Agriculture prevailed by a unanimous vote. Rufus Jackson and Ed Moore of Mexico, and John Hook of Paris, were named as a committee to draft the resolution, and were instructed to send same to President-elect, Woodrow Wilson. Another resolution endorsed the work of the State University and recommended to the Legislature that sufficient funds be appropriated for the erection of a live stock judging pavilion. Matters of legislation were also discussed. This discussion included the passage of a proposed stallion law. E. D. Moore, Mexico, Mo., moved that a committee be appointed by the chair to confer with the Draft Horse Breeders' Association relative to this bill. J. H. Glenn, Columbia; Trevor H. Moore, Speed, and E. D. Moore, Mexico, were named as members of this committee.

The election of officers resulted as follows, all officers being re-elected: President, James A. Houchin, Jefferson City; Vice-President, Paul Brown, St. Louis; Treasurer, Wallace Estill, Estill; Secretary, Rufus Jackson, Mexico.

Following the adjournment of the business meeting the members enjoyed a banquet at the Virginia Grill, after which those present attended the meeting in the auditorium and heard the address delivered by Mat S. Cohen of Lexington, Kentucky.

ADDRESS OF THE PRESIDENT.

(James A. Houchin, Jefferson City.)

The most that I have to say to you at this time is an apology for doing nothing during the past year. All that has been done has been the work of your secretary, Mr. Jackson. My time has been so occupied that I have neglected many things in which I am interested. However, the past is gone, and we can only look to the future, and to me the future looks bright. I do not believe that there has ever been a time when good saddle horses were in as great demand as they are today, and in my experience they never were worth as much money as today.

James Houchin.

The saddle horse industry is one that has made progress in spite of the neglect of those interested in the business. The trotting horse has many organizations interested in him and constantly promoting the speed horse. The draft horse, the thoroughbred, the Hackney, and other kinds and classes all have their organizations behind their special kind, but it has been left to the saddle horse to fight his own battles, and finally to win on his own merits. And today throughout America he is the one class that always commands a market, from the east to the west, from the north to the south, and a given number of saddle horses will bring more dollars in any market today than any other class.

Those of us who are interested need to organize for our own benefit. There are many things that we might do. We should ask horse shows and county fairs to give us the attention we deserve. There is nothing on any program that will draw more people and hold their attention longer than a high class ring of saddle horses. Yet how often do we see an exhibition of this kind pulled off at a cost of less than a couple of hundred dollars.

Virginia Rose 9904, by Grand McDonald 2228; dam, Daisy Mac by Star Rose. Winner of the Weanling Division of the Missouri Section, Second Saddle and Show Horse Chronicle Futurity, Missouri State Fair, 1912. Bred and owned by W. C. McCann, Holliday, Mo.

Our organization should recommend a selected list of judges. The greatest injury to the business today is the constant cry about fixed decisions. It drives many a man of means out of the game of showing horses, and we can and should remedy this evil. I believe in type, conformation, manners and ability to perform the gaits. The earlier we come to recognize and judge these points, regardless of ownership, the better it will be for all interested.

I am in favor of opening the books of registration for a period of six months. I believe there are many good mares eligible, but on account of oversight the owners did not register them. This might work a small hardship on those of us who did register, but saddle horse men can afford to be fair with one another.

I assure you of my willingness to co-operate with you in every matter that may result in good to the cause. I hope that every one will spread the news and let us have one grand love feast at our next meeting to be held at Mexico during the big sale.

THE SADDLE "HOSS."

(Mat. S. Cohen, Lexington, Kentucky.)

I was asked to make a thirty-minute talk. The one I prepared consumes just fifteen minutes. Prof. Trowbridge has suggested that I fill in on water.

Mat. S. Cohen.

When I received Secretary Wilson's letter asking me to make a short talk this evening, I said to my mother, "It's nice of Mr. Wilson to make such request of me," and she, thinking there is but one Wilson on earth, said, "Go, my son," and that's just what I've done, and right now she believes I am humoring the President-elect of the United States. I hope she will never be any wiser.

Yes, I was asked to deliver a "popular" address, but knowing that Kentuckians and Missourians never agree upon any one thing, I am going to say just what I please, because I have been promised all kinds of protection—sympathy, too.

I want to say to you that Missouri owes much to Kentucky, that Kentucky owes much to Missouri. We gave you the celebrated "Black Squirrel," and you traded him back to us in exchange for Governor David R. Francis. We gave you that gallant senator, William J. Stone. You gave us the great Rex McDonald. We gave you the founder of Jefferson City, Astral King; and now I am commissioned by the "hoss"-loving people of Kentucky to offer you a whole trainload of horses in exchange for Trowbridge.

It is strange to me how Professor Trowbridge got such wonderful hold on Kentuckians. I never saw "great" or "grandeur" stamped upon him, but they must be there. Why, only last week down in Lexington a crowd of Kentuckians were discussing the great men of your State, when one of them jumped to his feet and in a very excited manner said, "If I were called upon to define the word 'gentleman,' quickly would I ask Professor Trowbridge to arise, and with pride, and without fear of contradiction, I would point to him as one man who fulfills every condition and meets every requirement, as demanded by Webster. He is the acme of all the word 'gentleman' implies—bred and born a gentleman, lives and loved a gentleman, leads a gentlemanly life, and when the final call shall have been made, will fill the grave of a 'gentleman.'"

Missouri King 2960, by King Turner 1549; dam, Pansy Blossom 4258 by King Denmark. A champion saddle stallion, 1911 and 1912. Recently sold by W. P. Hawkins, Bowling Green, Mo., for $5,000. Bred by Trevor H. Moore, Speed, Mo. Owned by E. R. Maier, Los Angeles, Cal.

Now, that's saying lots about a young fellow, especially one whose morals have bathed only in the pool of timidity and who tonight, so they tell me, would blush at a pile of undressed lumber.

Don't understand me to insinuate that all your great men came from Kentucky. No, far be it; on the contrary, they tell me that Marshall Gordon was never beyond the border of your commonwealth; that Col. R. B. Price would not honor a cashier's draft on any Kentuckian, and that E. W. Stephens would not leave Missouri to become governor of our great state—much less his own. But we did give to you that brainy, fearness leader, Champ Clark, the man who dethroned the Republican God, when he commanded the waters of "Cannon River" to separate that the children of Democracy might cross over to that land of victory and control.

Yes, there are lots of great men in and of your State. Some are self-made, while others have become famous through the channels of the saddle horse industry, the "hoss" really making them. Why, Pick Hawkins told me that Missouri King made him sheriff of his county; Col. Paul Brown writes that My Major Dare has given him a national and international reputation; Lee Brothers swear that their horse operations have made their names the household word in every Missouri home; Ben Middleton tells me that until he bought Rex McDonald he was only known by the postmaster of his town, while James A. Houchin says, confidentially, that Astral King will eventually make him governor of this great State, and Eli Hill says it was the celebrated Holstein cow, Josephine, that put Columbia on the map.

Speaking of Conductor Hill reminds me of a very funny experience I had while on my way here. When I changed trains down at a little place called Centralia, I went over to the ticket office and said, "Give me a ticket to Columbia." The ticket agent sitting at his desk working the "key" said, "Pay on the train." I went over and got on the train and in a few minutes we pulled out. We had gone I don't know how great or how short a distance when a handsome fellow, clothed in a conductor's garb, came through the train with an 18-karat gold lantern on his arm, and when he reached me I said, "What's the fare," thinking everybody knew I was headed for this point. He replied "How far are you going?" I said, "Columbia, Mo." He kind of hesitated, and said, "I'll tell you later," to which I replied, "No, tell me now! why can't you tell me now?" He said, "Well, my friend, I see you are a stranger in these parts, and of course don't know, but on this train we charge twenty-five cents per hour, or two dollars and a half per day."

But coming back to the live stock industry, you are bound to admit that it has been a most potent factor in placing you in the honored position you occupy today. Why, my friends, let Miss Long, Colonel Brown, Lee Brothers, Hook & Woods, O. J. Mooers, Rufus Jackson, E. D. Moore, Houchin & Anderson, and others of equal note, cease their operations and you would see the fine horse business in Missouri as dead as prohibition in Tennessee.

But laying aside all humor, I am glad to be with you, and when I look upon the magnificent buildings of this wonderful institution, and see in every nook and in every corner the valuation and appreciation you have bestowed upon this younger generation, giving to them the benefits of the environments of honest, capable, trained minds, ignoring expenses and looking only to future possibilities, I no longer marvel at your magnificent progress, nor can I estimate or prophecy your future achievements. Your college stands out pre-eminently head and shoulders above all other institutions of its character, and the monument you have constructed here is the grandest, most sacred heritage that mankind can bequeath to his children. The atmosphere, the determination, and the exalted plane upon which you have placed your teachings demonstrate that you have ordained your sons to be leaders of men and not followers. Honestly, as proud as we Kentuckians are, I can not but feel the bitter pangs of regret, and wish my parents had have lived in Missouri during August, '71.

Yes, I'll testify that you Missourians are hard to beat in any kind of competition, I don't care what it is. There are others, too.

I have a friend in Kentucky who shows mules. Several years ago he shipped out to Missouri, tackled the Missouri mule and went down in defeat. Shortly after his return I met him, and said to him, "Well, Tuck, what luck?" He said, "Mattie, don't you know they beat my pair of jacks." I said, "That's nothing; they beat Star McDonald, Edna May, Red McDonald and Kentucky Choice—four of a kind—for me."

My mule friend has never been back to see you, but the lickings you gave me have not hampered my desire or daunted my courage to tackle you again. Right now I serve notice upon you that I'm going to be troublesome this year. You know we never really respect a fellow until he has licked us, and that being very true, I will leave you to imagine just how near and how dear you are to me, especially the young lad who this noon termed me the "John Hook of Kentucky." I failed to thank him then, but do now with all the sincerity of my soul. Not only do I thank him, but all of you for enduring this punishment so patiently and so bravely, and when I look into your open, honest faces and receive your sincere, hearty grip, I can but feel that I am in the land and with the people of the "blessed," and from this night on I shall remember you not as of Columbia, Mo., but Missouri, Columbia. I thank you.

THE HORSE BUSINESS.

(Francis M. Ware, Brookline, Mass.)

Francis M. Ware.

Most of those assembled here contemplate breeding; have bred, or at least are interested in fine horses, and the future of that animal for labor and for pleasure, in war as in peace. In all your minds there lurks, however, a general doubt as to his future—not so much the immediate future of 1913, but the period of 1918—'20-'25—when, should you embark in any such undertaking, the fruits of your efforts would be just reaching marketable age. That horses will ever become extinct is as impossible as any fact can be; that their usage will be much further restricted is improbable; that the scope of their usefulness will greatly expand is most doubtful—and these facts, while narrowing the field of the animal's usefulness in the former universal, broad-gauge fashion, simplifies the whole matter of breeding; reduces the temptation to experiment with varieties and grades of different varieties; concentrates the attention of the public upon certain definite types and families; puts the final premium upon excellence and deals the finishing blow to mediocrity.

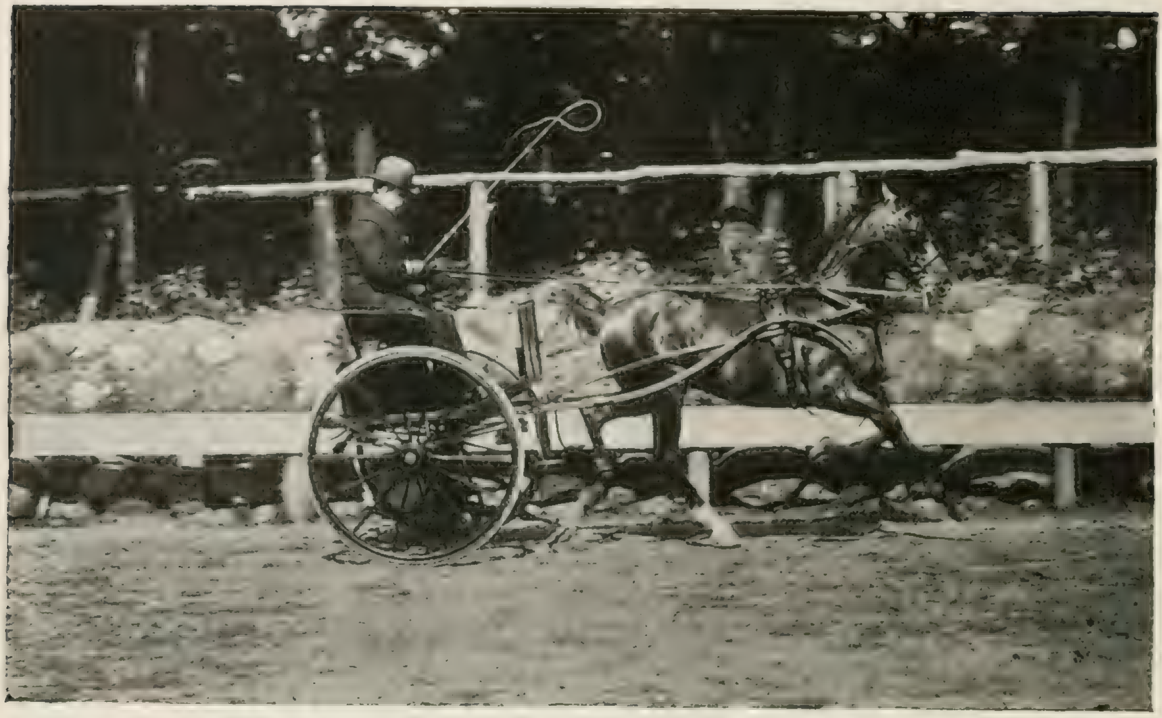
We Americans are, as a race, not well suited to succeed in producing the highest types of any animal. We are too impatient, too vacillating, too easily satisfied. We lack almost wholly the steady, calm, discriminating, persistently-stubborn effort which forms such a large element in the character of any successful breeder, or in the founding and developing of any popular variety of the animal family. Breed we from the very best, our percentage of failures, of misfits and of ordinary animals will be very large. The best specimens of any breed are expensive—but none but the best are worth while. Better far one real good mare than a barnyard full of nondescripts. There was never a period when a common animal brought anything but a loss to the man who bred him; there never was and never will be a time when a strictly choice article would not bring a profit to its producer, credit to its variety and satisfaction to its purchaser. Breed from the best to the best; never let your name be associated with anything but the best—or leave the enterprise alone. Make up your mind what you want, then find out if the markets will assimilate that sort; figure out if the young things will earn, at least in part, their keep-up to merchantable age; consider if you are by nature a "horse" man or a "cow" man or a "sheep" man, and if you are the one, be careful how you venture upon the other; for natural instinct and love for a certain pursuit, or some special branch, spells success or failure according to your attitude, mental and physical.

Panama, by Col. Stephens (Th.); dam, by Ernest B. 2:26¼, a son of Hambletonian's Last by Hambletonian 10. A Missouri-bred champion heavy-weight saddle horse at the National Horse Show, New York, and other eastern horse shows. Sold by Lee Bros., Mexico, Mo. Owned and exhibited by Godfrey Preece, New York.

Any man who just "raises horses," with no definite idea of exactly what he is trying to do, is eligible for the cosy corner in the "Foolish House." The "common or garden" mare, and the ordinary scrub cross-roads "studhorse" have done more to ruin their handlers than any undertaking they ever tackled, and have dealt the whole horse family of America a "solar plexus punch" from which it will be long in recovering. What can we expect from a combination of general worthlessness and hopeless mediocrity?

The governments of most nations have endeavored, either steadily or spasmodically—always unsuccessfully—to "improve the breed of horses" in their various countries. No government can succeed at any such undertaking any more than it can insure the production of choice cattle or swine. Successful breeding is wholly a matter of the man; of individual enterprise, ability, patience and persistency. The motor cars have finally done for the horse what no promoters, public or private, have effected, or ever could have effected. They have shown the public where the horse stood in the scheme of things; they have proved that he must stand upon his own bottom as an individual; they have sent thousands and thousands of equine trash to the sausage mill and the bone yard; they have made it impossible for anything to find favor but the best, and consequently made it wholly idle to produce or to offer anything but the best; they have caused the market value of that "best" to reach figures never before dreamed of, and they have so narrowed the horse's field of usefulness that there is no encouragement for a farmer to try to breed anything but what he can handle himself at a profit until he can sell it. No more do farmers and their boys handle trotting or pacing colts, train trotters, etc., to their inevitable loss—they should stick to the drafter, or to the sturdy, probably trotting-grade general-purpose horse of weight and substance, that earns his keep at any work, pulls a buggy a fair pace, does not disgrace a saddle, and finds a ready market at a fair price.

There never was a breeder yet who, if he failed, was unwilling to acknowledge that if he had had better horses, and had fed them really well all their lives, he could not have made money at the business. He knew the facts but he would not act upon them. He was generally a "cow" man or a "sheep" man, raising horses as a side line, and getting it where he hit the Christmas turkey, because he would try to make a square peg fit a round hole. You all know lots of these people—whatever you do, don't join that brigade.



Nala, by George Telluride. Bred by John P. Arnold, Williamsburg, Mo. Sold to Joseph H. Harriman of New York. Winner of grand championship as a heavy harness horse at the National Horse Show, New York. Recently sold with two other horses for $50,000, it being understood that Nala was valued at $40,000 in the transaction. Owned by Mr. Edward McLean, Jr., Washington, D. C.

Perhaps you think that "Dont's" have been coming rather thick so far—and they have—and it is chiefly "don't" that anyone familiar with horse-breeding up-to-date must record. Would you speak otherwise of any enterprise conducted upon the heedless-of-tomorrow, indifferent-of-today, helter-skelter fashion that horse breeding has always been? It is up to you, young men, to change all this; to put the American horse upon the pinnacle he should occupy and can hold against the world. We have that world to supply, we have the land, the money, the raw material—have we not the enterprise and the ability?

When you come to think of it, it is a curious fact that so many people have free advice to hand to the farmer upon every and any subject—and of none is this so true as in regard to the sort of horses he shall breed, and whether he shall raise any at all, or not. As a farmer, for myself and for others for 14 years; as a dealer and handler of horses of all kinds—thoroughbreds, trotters, drafters, harness horses, etc., by the thousands for thirty-five years; as an auctioneer and manager of the American Horse Exchange, New York, for 19 years, I have seen both ends, the middle, and every angle of the horse business; I have also, at intervals, bred extensively and have made a good living at the various undertakings; and when you ask me, "Shall the average farmer breed horses?" I can make but one emphatic reply, "Yes, if he will go about it moderately; stick resolutely to one breed; be sure that the breed is what buyers approve, and can make work for his mares, and young things old enough for labor, until he sells them."

Idle horses have eaten up more farmers than any other mismanaged item anyone can name, and have done more to keep the mortgage on the farm than anything else. It takes nice management to keep all your horses busy 300 days in the year, and true economy demands that they shall nearly so average; and that they shall have the bulk, vigor and endurance to handle the modern machinery ably, steadily and regularly. Many a man is working, feeding, shoeing, harnessing and caring for three light horses, when two heavy ones would do the work better. The horse kept for driving and for nothing else, does not earn his keep unless the owner is financially able to act as manager of his place, and not as a working foreman, and therefore needs such a horse to get about rapidly.

If you ask me what breed of horses I advocate, I reply that I have no intention of booming any variety of the horse. Every one of you knows what sort of horse the traveling buyers are looking for, and what strain of blood they prefer. They are the customers you must suit, for any farmer is foolish to try to sell at the wholesale or retail markets the horses he raises. That is a separate business, and many experts have given their lifetime to gain what

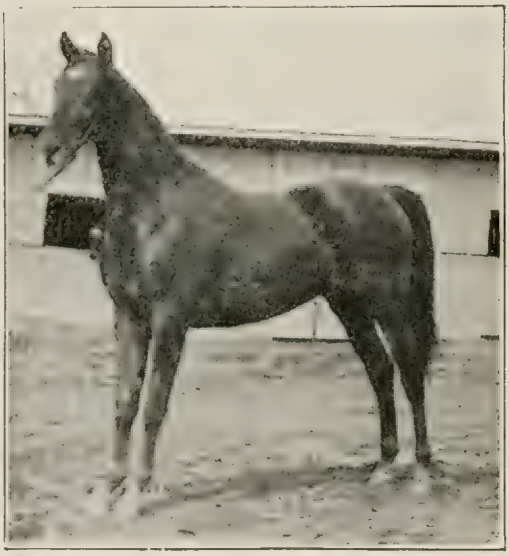
Astral King 2805, by Bourbon King; dam, Miss Carrick by Highland Denmark. Winner of the Mexico Commercial Club Championship Stake of $1,000, Mexico fair, 1912. Owned by James Houchin, Jefferson City, Mo.

knowledge of it they possess—and even then are wrong as often as they are right. There is no sense in your trying, personally, to market horses. I can tell you, however, what any market needs, in huge quantities and at extraordinary prices, and that is tight-made drafters of as much bulk as possible, fair bone, energy, activity, two good ends, (especially the head and neck which sell most horses); horses that are gentle to handle, pull truly and back what they can pull, single or double; any age over three years, sound, or practically so, and as fat as you can make them!

Flesh is two-thirds of everything in horse selling. A very fat, coarse horse will outsell quite a high-class thin animal. Haymow and grain bin are almost the best ingredients in the make-up of any horse, and for selling purposes they have pedigree or breed beaten forty ways. No fat horse is a bad horse in the markets, and "soap grease on the hoof" brings fabulous prices. Feed, feed, winter and summer; have them fat when weaned, and never let them lose the "colt flesh" if you would sell the kind that top the loads and the market returns. The man who keeps any kind of stock and doesn't feed it to the limit is a fool, and is fooling no one but himself, aside from the fact that if he does not wholly and steadily nourish a helpless animal, he is a brute and the cheapest sort of a swindler, inasmuch as he is cheating a defenseless creature of its dues—of the only return for its services which it can or does expect.

Really, if you will always have fat, good looking horses in your stables and no other kind, you need never consider breed at all. Any kind of a handsome fat horse will always sell well. You must, however, for your own purposes have a certain amount of weight before your loads, and that nowadays means thoroughbred (or high-grade) draft horses; bred for hard, heavy work. Whatever sort you breed, you should always strive to have your mares as much alike as possible, and use the same stallion as regularly as may be in order to enhance the probability that your young stock will "pair up" well. Valuable as is one first-rate high-class horse, a similar pair is more than twice as valuable, and you will go far on the road to such results if the parents are of the same type and general characteristics to begin with. How common it is to look over a farmer's bunch of colts and find no two resembling each other in any fashion. Whatever you breed or buy, strive always to estimate them with the cold consideration and the icily critical eye of the man who does not own them. The moment your colts do not fill your eye, get rid of them, even if you have to kill them! Don't let anybody say you ever handled a poor horse—and that reputation will return you a substantial financial equivalent in the extra prices such a man can always obtain, even for animals not up to his or to the buyer's standard. "Cheap stuff" and horses that do not "class" in any regular market grade are drugs everywhere—ruinous in the days of plenty gone by and far more friendless today. "Class" and quality make a horse worth $250 to $500; lack of them, $120 to $175, all other things being equal. Doubtless many of you will consider all this as too general and as not special enough, but in a brief paper like this, one has no space to specialize. I can merely drop hints, which, had I been given at the outset of my career, would have profited me largely in financial equivalent.

Princess Eugenia 6558, by Chester Peavine 3184; dam, Queen of Lincoln 6557 by Woods' Eagle Bird 1014. Winner of the American Saddle Horse Breeders' Association Trophy for registered saddle stallion or mare three years old or under at Missouri State Fair, 1912. Owned by Eaton Farm, Mexico, Mo.



Kitty Gordon 9598, by Montgomery Chief 1361; dam, Lora Chess 2338 by Chester Dare 10. Winner of the Yearling Division of the Missouri Section. First Saddle and Show Horse Chronicle Futurity, Missouri State Fair, 1912. Owned by Eaton Farm, Mexico, Mo.

You have probably noticed that the government, and the people who are trying to deceive it into buying stallions of various sorts for stationing about the country at public service, are raising the usual ten-year-interval outcry about the "scarcity of army horses" and the impossibility of mounting the cavalry, etc., in time of war. To my own knowledge, and as the public press will prove, this sort of talk has been going on since 1864. The gist of the whole thing is this: If any government will pay market prices, it can get all the horses it needs in any country—but not otherwise. Any genuine demand will always be met. Italy pays about $375 per head, France $280, England $250, etc.—and the United States offers $150 to $187 for an animal which in the open markets will fetch $250 to $300 for any other purpose. Naturally it "finds cavalry horses" almost impossible to buy. While the English, during the Boer war, bought about 106,000 cavalry horses in America, and the French over 40,000, our government "could not find 1,500 to 2,000 horses per annum suitable for cavalry and artillery." I met buyers in St. Louis who were trying to buy 500 head (unsuccessfully)—and yet at Lathrop, Mo., the English government had some 18,000 animals.

The government hopes (or says it does) that the farmer will patronize these thoroughbred, trotting, Morgan and Kentucky saddle-bred stallions—and probably some farmers will do so. If you do, you must give the option to the government of buying your colt, as a three-year-old, at $150; or, if you sell him otherwise, you must pay a $25 stallion fee. No man can afford to sell a really "chancy" three-year-old to anybody at $150 and hope to make any profit—counting in every item of keep, insurance, losses by death, accident, etc. If, however, you do patronize this undertaking, do at least breed only really good mares of size, etc., to these horses. The country is flooded with little scrubs without your assisting in the outrage. The trotting or the saddle-bred sires will

My Major Dare 4424, by My Dare 2642; dam, Lily Rosebud 7138 by Elastic 233. (Col. Paul Brown, up.) Prominent winner in Kentucky and Missouri, brought to Missouri by Col. Paul Brown, St. Louis, Mo., at a cost of $6,500, and recently sold by him to R. A. Long, Kansas City, Mo., for $10,000, the highest price ever paid for a saddle stallion. To be shown and used for breeding purposes in Missouri. Owned at Longview Farm, Lees Summit, Mo.

probably get you toppy animals of fair size and good quality, but not the sort you can use on the farm with profit; the thoroughbred will hand you a rather similar beast as to appearance; but nervous, high-strung, not a "good doer" as a young horse, and possibly worthless for your purposes. As to the "Morgans," while I knew them well forty years ago in Vermont and elsewhere, I confess I do not today know what you mean by a "Morgan"—unless you would understand that a cow was a "Jersey" because her great-great-grand-dam was reported by old Bill Jones (who died 100 years ago) to have been seen one day in a lot with a bull which somebody (he forgot who) thought he had heard was a Jersey. I do know however, that except as "Southern horses" at very low figures, the one horse the markets have no use for is the little trappy animal that is not especially good at anything.

If the government would really make up its mind what sort or horse—what type and size—it wanted for army work, matters would be simplified; but ideas change every year, resulting in hopeless confusion. Many a "rejected" horse has come east and won in our show rings; brought big prices; proved high class in park, road and hunting field—yet the army folks refused him at $150. I would almost guarantee that of 100 horses rejected this year at any market, 75 per cent of them would go through next year at another, before different buyers, contractors and "cappers."

It is undoubtedly true, though not yet acknowledged by either the governments or the military authorities of any country, that the army riding horse of the future will be a small horse—a sturdy, stout, gentle sort of 14.2 to 15 hands in height, and 900 to 1,000 pounds weight. The days of the regulation "cavalry horse" are over—the "mounted infantry" will be—are today—the ones of the service to be transported on horseback; all recent wars have proved, are proving, that fact; but in face of it every country is advocating the tall, leggy thoroughbred horse to sire army horses. Think of it! Advocating for purposes of endurance, the most trying campaigning, bad and scanty feed and to carry 267 pounds in full marching order, an animal whose invariable conformation is tall, leggy and light; who has for generations been pampered as no other horse ever was; whose chief work in life has been to run across the back yard and return, carrying 100 pounds. If you argue that the thoroughbred transmits valuable characteristics as no other horse does, will he not infallibly hand down these effects of handling? And where does he get any others to transmit?

As to the draft horse, the choice of breeds is wide, but by all means follow popularity in breed and do not be led to experiment with any variety which has not that indispensable recommendation. The popular varieties today in America are the Percherons and the Belgians; the Shires and the Clydes are approved in some quarters; the Suffolks are attractive, but not as yet in sufficient numbers to establish a reputation. Percherons and Belgians, both stand heat well; are clean-legged; not specially given to developing sidebones or ringbones—those banes of the city work horse; are active and nimble, handle themselves well on slippery or icy pavements; are good doers, of true draft type, and breed true enough to that type to make it easy among either clean-bred or grades, to match up pairs without much trouble, and even to fill a large stable with horses, any two of which will make a good pair. They "wear themselves" well in harness, are attractive, intelligent, bold, and whatever their bulk, surprisingly active, while they earn their keep at labor at an amazingly early age, and (when not overworked) to their great personal advantage. You would be, as I was, amazed to know how many three-year-old grades are working regularly in heavy trucks in all our cities. I was judging a class of some twenty pairs of these amiable behemoths at a New York show, and chancing to notice that one horse was only a three-year-old, I immediately examined the whole class and found that of the forty animals competing in this event for "draft pairs in harness," no less than 16 were three-year-olds, although I learned that the owners had bought them that spring for four years old. All our draft horses are considered by foreigners very light in bone, and consequently in appearance greatly overtopped. This is a just criticism—they are, if any definite arbitrary rule for measurement below knees and hocks exist—which it does not. The foreigners themselves are breeding them "light under the knee" compared to old time specimens, and no one can prove that they are wrong so to do; or that our horses, often sadly deficient, suffer, for practical purposes, from any so-called lightness of the shank bones. The truth is that no characteristic of the horse has been so unnecessarily insisted upon as large bone. Everyone says it is essential and proper, but no one can prove it. As personal opinion, or as a tradition, the claim has whatever weight any individual may choose to give it, but nothing more. Think of the spindle-shanks you have seen carry a huge bulk unfailingly for years; remember the almost perfect legs you have seen go wrong in a few months. The whole question of durability in the horse's legs is settled: First, by the way the legs set into and stand under the body; second, by the wearing character and soundness of the feet; third, by the relation of all the joints to each other and to the body; fourth, by the placing and shape of the shoulder blades; fifth, by the common sense of the owner and the driver; sixth, by the intelligence and skill of the blacksmith. Never leave a horse when you are buying or refuse to patronize him when you are breeding, just because you imagine (or someone has told you) that "he is too light below the knee," and for no other reason. Oh! the good ones we have left because of that bugaboo, and the lobsters we have bought because they "spanned" about so much under the knee. Do you engage your farm hands by the same method? If light bone does not bother the drafter you have worked hard for ten years, why should you worry? A good breedy head and neck, a fine countenance, and an intelligent wide-awake expression half sell any horse. Don't own or buy or breed to any big-headed, bull-necked, sulky-looking mutt just because he looks "cheap," and just because otherwise, he is of good draft shape. However cheap you think he is he is always dear whatever you pay. A good front usually carries with it a fine finish—fine mane and tail, clean heels, fine coat, smooth articulations everywhere, and harmonious development in all parts. As you choose your friends, so select your horses—by the head and countenance first.

If there could be a state or general law enacted forbidding any farmer to own any gelding more than four years of age, it would work boundless advantages to the agriculturist, in that (1) it would insure his keeping mares to do his farm work; (2) it would encourage him to breed such mares; (3) it would induce him to feed his young stock freely; to mature and break them early; to put them at light labor as two and three-year-olds; (4) it would compel him to market all his gelding in or before their fourth year, when they are perfectly saleable nowadays, and before they have had a chance to accumulate the various infirmities of wind and limb to which farm-managed horseflesh is heir. Four-year-olds are needed nowadays in any market, and are mature enough for any average work. The old-fashioned idea that no horse was marketable until he had a "full-mouth"—i. e., was five years old or over—is exploded, and the farmer who keeps any horse, unless he has work for him, one day after he can sell him at a profit (no matter what his age) is taking a tremendous risk with a very perishable commodity, and from a regular farmer he becomes a speculator. The time to sell is when the other fellow wants to buy, and failure to do this as a strict business rule costs farmers all over the country hundreds of thousands of dollars annually. If a farmer had no proper cellar or building to store his potatoes, corn, etc., he would never try to hold them—yet he will persist in wintering stock in the worst of shelters (or none at all), and on the roughest forage, although they are far more likely to suffer serious damage than any planted crop. Stallions are perfectly practical to work on the farm, provided you always treat them like geldings and work them steadily. I always used stallions for any harness work or riding work, exactly as I did mares, and never had any trouble. The average stallion is caged and treated like some wild beast, and such screaming crazy brutes are a disgrace to the man who keeps them.

Poetry of Motion, by Raven Dare 1284; dam, Jemima 1626 by King Marvel 1065, by King Chester 294, by Chester Dare 10. (Mrs. O. J. Mooers, up.) Four times winner of championship for walk, trot and canter horses at National Horse Show, New York. Winner at Olympic Horse Show, London, England. Exhibited in 1912 by O. J. Mooers, Columbia, Mo.

I would not advise everybody, or in fact most men, to keep a stallion unless they are born horsemen and genuine good judges of that particular breed. Men will allow that their mares do not suit the stallion, but woe betide anybody who dares insinuate that the stallion does not suit the mares! The farmer who owns no sire will probably look about carefully for the particular horse that should probably "nick" with each particular mare he owns—to his great financial subsequent advantage. For another item, a man must own a lot of mares, or have a large outside patronage for his horse, or have plenty of harness work such a stallion can perform, to make his sire profitable to keep. No stallion can make a reputation unless by luck or by good management he has access to good mares. The lack of this opportunity has ruined the good name of nine horses in ten, and has discouraged horse breeding in four-fifths of our communities; for the average American farm mare is a shocking brute.

The chief reason why any farmer should keep mares and should breed all of them is that the ensuing colt crop is practically a side issue—a "catch crop" which produces itself, so to speak; while a mare is a sort of equine "cascaret," if in foal, that "works while you sleep," and while she rests or toils at other labor to produce you the foal which costs no more than a calf to get.

Foals dropped in the late fall inconvenience nobody, mare or master, come at the time when work is slack and horses can be spared for a week or two—while the youngster gets to spring grass at just the right age to wean off without checking growth, and to have by fly-time a long enough tail and mane to partially protect himself from insect attacks—an inconsidered item in the welfare of very young animals which has much to do with their growth and flesh-keeping.

What a curious fact it is, when the horse is the only animal which every farmer, whatever his line of business, must keep, and usually keep in quantity, that those animals are the only ones he does not himself raise; and that he puts out millions of dollars annually in equipping and renovating his stable force, when he could perfectly easily and most economically provide himself with all the young, sound, fresh horses he needs, and turn a number of them each year into hard cash for his own pocket—make them a source of profit instead of a cause of great and inconvenient outlay. When farm horses cost $400 up a pair, no farmer can afford to buy them—and even if he does he only gets the dregs of the market and never a really high-class animal. Furthermore, both the proprietor, the family and the help will take far more pride in and care of home-raised horses than of any purchased animals. Ordinary sentiment and personal pride insures that.

The average farmer is a poor feeder, in that he has an exalted opinion of the value of hay and roughage in the feeding of horses. He is not apt, when hay and grain closely approach each other in price per pound, to avail himself and his horse property, of that fact and increase the grain ration, while at the same time diminishing the amount of roughage fed. The mangers are kept full of hay; the animals eat twice what they need and far more than they can profitably digest; while they waste or do not relish at least 30 per cent of it. Horses in work should be fed hay only once per day—at night—unless it is thought best to give them a mere handful at noon. For thirty-five years I have followed this practice—for nineteen years having the care of 300 to 500 horses every day, and never had any but the best results with never a case of heaves or colic. Nothing can be worse for a horse than to begin the day with an overloaded stomach. At night he has the time, and after a little rest, the digestion to handle all the hay he needs in the 24 hours. In fact, I always make my men take away from the horses all the hay they do not consume in one hour—and any careful feeder, by doing this for a few days, will find out almost exactly what each animal will consume in that period and feed that quantity regularly. A horse must rest, and so must his stomach; it is what he digests properly, not what he eats, that puts the flesh on his ribs. Any pot-bellied, hay-stuffed horse or colt is a disgrace, a needless expense, and an animal incapable of ably and safely doing the work or making the growth for which he is kept.

Few farm horses are half-cleaned, and the soap and water which are as wholesome for any beast as for man are practically never applied. A thorough bath once a week will take care of all the dandruff, dried sweat and dirt, even if the subject gets merely a bare "lick over" with a brush all other days. Any time they are cool, wash all over. Soap well, wash again, and scrape; keep them out of a draft for an hour, and if weather is at all cold or changeable, throw on an old blanket for them to "steam out" in. In my riding schools, where I had often one hundred horses of my own in hard work, every one was washed every night, and Saturday nights got an alcohol shampoo. They shone like glass bottles, were in fine flesh and vigorous health, averaged 30 miles a day in work, and while I had a man to every 10 horses of my boarders, four men took all the care of my own 100—a huge saving in labor.

Of course, in Missouri, mule breeding attracts great attention, and many farmers will prefer to breed these profitable hybrids rather than horses. The big, drafty mare is the sort to drop the mule that tops the market, and no man should waste time nowadays with little 1,000-pound mares. Bulk and weight we must have to handle modern machinery, and to get the prices, and this size must come from somewhere as an inheritance. Mules are not popular in the east, as contractors in cities find they do not average to back what they will pull, because of never being properly mouthed in breaking, and because eastern labor will not try to "get on with" mules. So this market will never be a large consumer of such creatures. One strong objection to them is that a crippled mule is that and nothing else, while a mare similarly disabled may be, through her colts, the most profitable bit of property her owner has.

I have run on to undue lengths, I fear, and could argue on for hours over any detail among those upon which I have herein touched in such a haphazard and skeleton fashion. I only wish in closing to urge that there is no question of whether any farmer can afford to breed horses. I insist that he can not afford not to breed horses, and that in no other way can he so cheaply and satisfactorily maintain his horse stock, while getting his own work done practically for nothing through his profits from sales, and the extra work, thoroughly done, that able, sturdy, vigorous, young heavy horses will easily accomplish. America can be the greatest horse-breeding country in the world—why not, by your intelligent endeavor, patience and forethought, help to make it so?

THE AMERICAN SADDLE HORSE AND AMERICANS.

(E. A. Trowbridge, Professor of Animal Husbandry, University of Missouri. Article reproduced by courtesy of the Saddle and Show Horse Chronicle, Lexington, Kentucky.)

E. A. Trowbridge.

As is the case with most other valuable features of our civilization, the American or five-gaited saddle horse is an outgrowth of a necessity. In his first estate, he is the result of an effort to supply a possible and practical means of travel. It was with this purpose in view that the predecessors of the present "gaited" horse were developed. As has been the case with nearly everything American, the spirit of competition in the production of this class of horses developed early and great pride was found in the ownership of the best saddle horse. This was particularly true because the saddle horse was a close companion to to the men he served, and if he maintained his place in the affections of his man and master, intelligence, courage, good cheer and ability to place at his daily task must be his inborn attributes.

The beginning of what has since come to be a recognized breed of horses, with fairly well-established standards and manifold duties and functions, occurred in Virginia, Kentucky and Tennessee. Not only was this territory that through which the frontier line of civilization has passed, but it was a section of the world which early in its civilized history developed a permanent and prosperous system of agriculture. It was in just these stables that some of the best blood of England had settled and was living prosperously at the middle of the nineteenth century. Broad minds and well-developed intellect, based upon a foundation stock of men and women with a high degree of intelligence, tenacity of purpose and love of the "world beautiful and plentiful," and assisted by the custom of slavery in its humanest form, here had at an early day developed a race of people with honor, chivalry and hospitality such as the world had not theretofore seen and probably will not see again until a series of conditions establish themselves and make possible its development.

Here was a race of men who spent much time in the saddle looking after lands and property; who lived among not the best of roads at all times; who rode long distances to travel in the transactions of their business. Here was a race of men who loved their families and enjoyed the companionship of neighbors and friends. They were men who loved God's out-of-doors, his green earth, fresh air and running water, and all that goes to make nature beautiful and inspiring. And still here was a race of men in whom courage was predominant, and in whom flowed good "red blood," and who later proved themselves to be men in the true sense of the word.

It was among such a class of people and under such conditions that the American saddle horse had his birth. No wonder that he still remains close to the heart of men, and it does not seem strange that men even "fall out" occasionally over the merits of each other's horses.

While the prime function of the early saddle horse was that of an economic riding horse, yet he did many other things and was looked upon as one of the mainstays of the farm, either under the saddle, in the plow or to the cart. It did not take long for people to discover the enjoyment of horseback riding and in later days this form of pastime has proven a source of pleasant exercise to many a man and woman who needed just such a tonic.

After this foundation of the breed had been laid, there came the period of transition which extended from the beginning of the Civil war to the re-establishment of peace and prosperity in the south and border country. Even during the period of reconstruction a few saddle mares which had either been left as worn-out by soldiers or had been left to the inhabitants through pity, proved themselves valuable. In these days of the reconstruction they helped to grow crops, and in many other ways to produce a livelihood for people who needed them. As prosperity again developed in the country, so did improvement in the horses grow, and it is since the Civil war that the American saddle horse has assumed a national, and even world-wide position as a breed of horses.

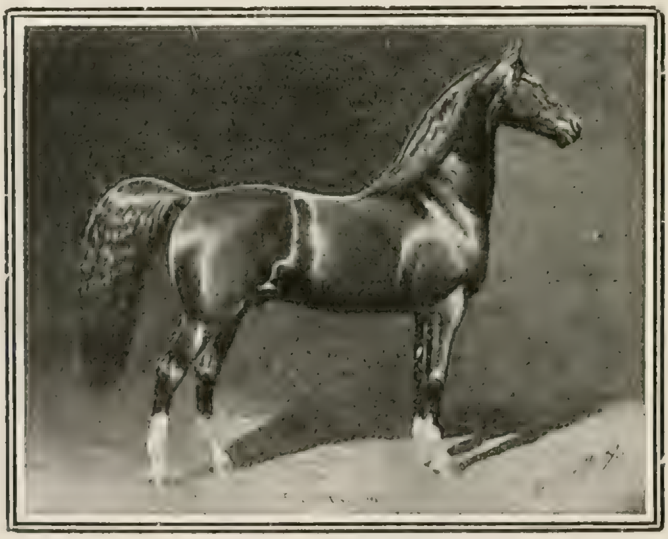
With the earliest settlers west of the Mississippi river, particularly in Missouri, came a few of the best saddle horses of Kentucky. The majority of the early settlers in Missouri came from Kentucky, Tennesse and Virginia, and hence it was but natural that they should bring with them this type of horse. So that at the present time the district for the production of saddle horses is much larger than it was in the years gone by.

To follow the saddle horse from his beginning to his present state is but to follow the "ups and downs" of the human race in the districts in which this type of horse has abounded. He has been close to man at all times, has often stood between man and death, and in more than one case has been the means of the saving of a life.

At the present time the saddle horse still maintains his close relationship and companionship with man. His field of usefulness has been broadened, his reputation has grown, and at the present time he stands the most admired equine specimen that the world has ever produced. He bespeaks the personality of the people who have improved him; he is a living description of their ideals and ideas, of their temperament and their passion, and a study of the saddle horse from this standpoint gives us a clean and clear-cut insight into the characters of men and women. It is because of this close proximity that the saddle horse stands second to a human being in the hearts of those who know him.

At the present time, as in the beginning, the primary function of the saddle horse is service as a saddle horse. He is ridden on the farms and on the road by men in the transaction of their business, and in the daily oversight of their operations. Not only does he fulfill this task, but when needs be he fills the collar as well as does a mule or any other horse, and because of his courage, stamina and intelligence, he has ever proven himself satisfactory in these capacities.

The production of the saddle horse has often been called a specialized business, and in some few cases has been named "a rich man's game." To this allegation a most emphatic denial can be made. A close scrutiny of the production of five-gaited horses in America will bring to light the fact that by far the greater number of saddle horses produced are born and raised on small farms where one or two or perhaps five saddle mares are kept. These mares perform some of the work of the farm and serve as riding horses for owners and their families. On these farms they are in every sense a business proposition, but over and above that fact, they are still a source of pleasure. If the facts were brought to light, many a good old saddle mare might be found who had helped to lift a mortgage or to pay off a debt by the yearly production of a high class foal. True, some have failed, but many fail in all kinds of business. So it is no more than right to say, as a farmer's horse, the five-gaited saddle horse has filled the bill from a profit-producing standpoint.

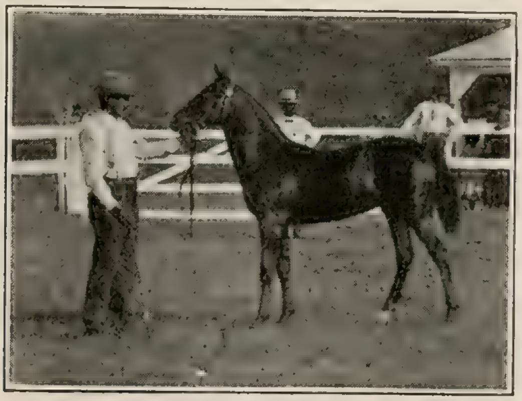


Forest King 1462, by Squirrel King 973; dam, Stella French by Montrose 106. Bred by Millard Turner, Hallsville, Mo. Owned by Forest King Horse Co., John Hicklin, manager, Sweet Springs, Mo.

But the saddle horse has come to fill a different place than that which he did originally. This new function has been made possible by the development in this country of the custom and practice of horse-back riding as exercise and enjoyment. Notwithstanding the fact that the bicycle, the auto and even the airship have been developed to a successful working stage, the saddle horse maintains his position in the hearts of men and women who desire outdoor exercise, and never did the market look better, and never were the horses more scarce than at the present time.

The saddle horse as a pleasure horse has no peer, and not only the men and women of the farms and villages in his native district are using him as a source of pastime, but buyers from the cities of the east and west, and even of the old world and other foreign countries, are coming to his native home to seek out and purchase the better specimens of the breed to be used for the pleasure of the inhabitants of American cities and foreign countries. With the increased knowledge of the saddle horse is bound to come an increased demand for him, because with the saddle horse, as with other good things, "knowing is believing," and he is bound to increase in his usefulness to mankind.

It ought therefore to be, to all who are interested in the saddle horse in any of his various estates, a pleasure to know him as he is, to know his habits and his moods, his courage and his intelligence. In his production the average man may know that he is producing a profit not only to himself, but a source of pleasure to others, and that he is thereby doing the world a service. In the riding of a saddle horse every man or woman with average intelligence absorbs admirable characteristics and traits, which, if more prevailing in the human race, would make that race of people better. We may, in fact, say, without fear of criticism, that if more of the characteristics of the American saddle horse were prevalent in the human race that this would be even a better world.



Missouri Draft Horse Breeders' Association.

President—J. F. Roelofson, Maryville.
Vice-President—Dr. S. D. Henry, Excelsior Springs.
Secretary-Treasurer—E. A. Trowbridge, Columbia.

ADDRESS BY THE PRESIDENT.

(J. F. Roelofson, Maryville, Mo.)

J. F. Roelofson.

We have met here today at the appointed hour and for the purpose of holding our regular annual meeting of the Missouri Draft Horse Breeders' Association and we have with us some distinguished gentlemen who are able speakers and who will not only entertain us, but will also deal out to us some very valuable information that will be of lasting benefit to us as Missouri draft horse breeders. The fact that I make no pretensions as a public speaker myself, and feeling that the time might better be given to the able men present, I shall be brief in what I have to say.

Since this organization was effected some three fears ago draft horse breeding in this State has greatly increased, and while as members and officers of the Missouri Draft Horse Breeders' Association we might have done even more, I feel, gentlemen and fellow breeders, that our efforts have not been in vain and that our hopes have, to some extent at least, been realized. I am glad that I can truthfully say to you today that there was never as much interest being manifested in the breeding of drafters in Missouri, and I would further state that there was never a time when there were as many good draft horses within the State as at the present time. The business has made most wonderful strides in the past three years.

We have noticed since our organization that many new breeders have entered the field and are now producing excellent types of pure-bred animals. Many farmers have a pair or more of pure-bred mares, and many more are very eager to secure them. The fact is, gentlemen, that a general sentiment has developed in our favor, and we are receiving encouragement on every hand in the good work we are doing.

People are beginning to realize to some extent what it means to Missouri to produce plenty of good draft horses. The commercial clubs, the progressive banker and business man, in our agricultural districts throughout the State have seen the "handwriting on the wall" and realize that from a commercial standpoint this State should go forward in the production of the good draft horse, and these men are now invariably encouraging their farmer friends in this direction. Now such men are generally good financiers and good business men, and they are looking after their own interests as well as ours, like the railroads that are so willing to spend their money to interest the farmer in the development of lands adjacent to their lines, so these men may reasonably expect the proceeds of our business to flow into the channels of trade, but as we get the first profit out of this business, we should consult our own interests, rather than wait to be rallied to it by any business or professional man, even though he be more farsighted in some things than ourselves. We as a people of Missouri, while largely agricultural, have our varied industries and necessarily must rely to a very great extent on the support of our neighbors in business, and while we are doing our part to help the business men around us, would it not be well for each of us who are farmers to raise a few draft colts each year and thereby help ourselves. What could the Missouri farmer send to market that would bring better returns than a bunch of well-bred, well-grown and well-finished drafters, especially while they bring the prices they do now, and have for many years, and are bound to continue indefinitely?

The extreme demand for mares, grades as well as pure-breds, proves to me that there is a great shortage of them. The prices offered and paid for them certainly prove this on the theory of supply and demand. Even these grade mares are not bought merely for the production of market geldings, or mules alone, but, in many instances, to reproduce themselves as well. This is the condition of the draft-horse business today, not only in Missouri, but everywhere; and it is a self-evident fact that good draft horses will continue to bring high prices for years to come, because we must raise or buy mares to produce mares before there can be much evidence of a "let up" in prevailing prices. Our country is fast developing in population and extending into the vast domains of the American continent, hitherto almost unknown, which has opened markets for us and that will be everlasting to, I dare say, the most of us. Our opportunity is here and has been for some time. Will we embrace this opportunity or will we sit idly by and see our sister states, that form our very boundary lines, produce that which we should be producing, and thereby reap the reward? Nay, verily, Missouri can and does produce as good as any state, but we are not, as a state, producing enough of the good ones. There is no danger of Missouri producing too many good ones; there is a demand for all of them.

Cattle men boast of their great progress from the long-horned Texan to the heavy modern "baby beef," and they may well feel such advancement with pride, for such has been a great work. Why not we, as we go on with our improved draft families, attaining the ideal finished drafter, with his great power, his massive muscular development, his handsome form, his noble equine disposition and intelligence? We too, then, may be proud to note the vast difference between him and the original "mustang pony."

Let us then, as breeders and members of this organization, resolve that with the New Year we will use our best efforts to further the draft horse breeding interests in Missouri, and as time rolls on, let us "show" to the horse world that we are not only producing the "improved," but the best draft horses to be found in any state or country.

Percheron stallions, Phenix (gray) and Kroisuer, by Carnot. Owned by J. F. Roelofson, Maryville, Mo.

ADDRESS OF WELCOME.

(Dean F. B. Mumford, Columbia, Mo.)

It will hardly be necessary for me to say that the College of Agriculture, the teachers and the instructors and investigators in that institution with myself, extend to you a cordial welcome to all the opportunities which are here provided, and it gives us pleasure for more than one reason. I think I have met with this association every year since its establishment. The first year we met in the office of the department of animal husbandry and we did not need any more chairs at that time than belonged to that department. About eight men, altogether, comprised the Missouri Draft Horse Breeders' Association. The association has grown from year to year, and I judge from the attendance here this afternoon that it has increased about ten times during the last year. I hope that is the case.

I am glad to speak a word of welcome to you because I have great faith in the draft horse. I can, with great sincerity, encourage the breeding and improvement and extension of the draft horse business in this State. I have yet to be convinced that the motor tractor will take the place of the horse in our ordinary farm operations on the ordinary farm.

The size of the average farm in the State of Missouri is 125 acres and you can readily understand that the farmer who owns 125 acres will not be able for a very long time in the future to buy a motor tractor to do his work, and if he could, it would do only a part of his work. We must have horses. The breeding of draft horses is an economic project. It is a profitable project for the farmer. I have always had some doubts about the wisdom of advising the average farmer to breed trotting horses or high-class saddle horses that bring a high price and are valuable on the market. The man who loves a horse, who would rather handle horses than to eat, the man who talks horse and thinks horse and dreams horse, is the man to handle that kind of a horse, but for the average man the heavy or draft horse will be a safer horse to breed.

Investigations in farm management show it costs nearly $100 per year to keep a horse on the farm. When you keep a big draft horse a year you have to get $100 out of him somehow in order to just pay his keep, to say nothing of the profit. A few good draft mares on the farm that can be used to do the work and raise colts every year may be so handled on our farms that the work can be done at no cost, because it is a poor kind of a draft mare that will not raise a mule or horse colt that is worth $100 at weaning time, and if it costs $100 to keep that mare, as I figure it, the work that you get out of her is clear gain. The colt pays for the keep.

Another thing I want to say is that the best place for a draft horse is on the small farm. We hear it frequently stated that the place for a draft horse is on the big farm where the man uses big tools, but the place that the draft horse has reached its highest development and the place where it has been most profitable is on the small farms of France, in the province of La Perche, where the Percheron horse originated. There is a place on the small farm for the draft horse.

It is not my purpose to tell of the merits of the draft horse. You gentlemen interested in the horse are better able than I to do that, but is is a very gratifying thing to me that so many men, breeders and farmers, have come here this week and have associated themselves with the various organizations for the betterment of agriculture.

OUTLOOK FOR DRAFT HORSE BREEDERS.

(Col. R. L. Harriman, Bunceton, Mo.)

If you want to hear big horse talk out of an auctioneer, some of you make a sale.

It is a great pleasure to be here, I assure you. I did not expect to be called upon to say anything. I am not a horse breeder just now. I have reformed. I used to be a horseman. I can probably say something of encouragement to you horsemen if it is worth anything to you. For the last five or ten years I have been called on to sell live stock of all kinds all over the United States from Mississippi river to the Pacific Coast. I can say to you frankly now that all breeds of draft horses are selling higher, easier and better than any other kind of live stock that we are called on to sell. I do not say that to flatter you, but because it is the truth and the records of the

R. L. Harriman.

sales will show it. Within the last month I made the best Shorthorn sale made in ten years in Kansas and in the same month I sold 51 head of Percheron horses, from suckling colts to grown horses that averaged $600, and the best price for the Shorthorns was a $175 average, so the draft horses outsold the cattle more than three to one, but I want to say that the Shorthorn is going to sell higher, and very soon, too.

Somebody asked the question, how long will these horse prices continue? I believe you can go on breeding draft horses. The greatest problem that business men have to consider now in the development of trade is power. You have a cinch on power. They are building a dam at Keokuk and the object of that enterprise is to create a tremendous amount of power, and that will be sold to Kansas City, St. Joseph and all the cities in the country, and the idea is to make power cheaper. But the greatest of all power is horse power.

I rode in the finest automobile that I was ever in in my life, going over to the Robinson sale. It was a 60-horse power Pierce Arrow car. It was a most elaborate thing. You men know that is a sample of the equipment of that splendid breeding establishment and the draft horses have made the money. I said to the young man who was driving the car, "You seem to have a magnificent car here." He had a 60-horse power machine, remember. Thinking of the horse power of the thing got me to thinking about power. Did you ever think of it, that even the electric engines, tractors, motors, etc., are all rated by horse power. It was not only the first power but the most important of all power, and it is first of all in more ways than one. Horse power is the power that drives the machinery of agriculture.

If you were to stop the horse power that drives the machinery of agriculture you would have no use for electric power, or of railroads across our State. You would see the grass growing in the streets of our cities and would witness the most desolate state of affairs that you can imagine. I believe that just as the country increases in population—we have one hundred millions of people to feed, and all must be fed from these farms of ours—you will appreciate the importance of horse power.

While you people who are undertaking to breed a horse that can furnish as much horse power as two mules or two saddle horses, you are making two blades of grass grow where one grew before. You are producing a horse that sells for twice as much as the other, and a horse that is actually worth twice as much as the other, for he stands for double the power that the other does. The price is going to be regulated by the power it can produce, especially on the farms of our country.

I am enthusiastic about draft horses. I was a trotting-horse man and I have reformed. We used to call these big horses the "bulls." I have learned to appreciate the draft horse in a way that I never imagined I could, and if I were to begin to breed horses again at my age, I would certainly begin to breed draft horses. I like all the breeds of draft horses because they seem to enter into the welfare of our country in a way that means a good deal, meaning they will be permanent and substantial.

I am glad that you have started this association in Missouri. It is an enterprise that is needed. Missouri has been long in the lead in the matter of mules and saddle horses, and if you gentlemen will show what you can do with draft horses, you will add a good deal to the reputation of our State and the wealth of the farmers of the country. They will buy your horses. When a man writes to me to make a draft horse sale it is a pleasure to book that sale, for if the sale is well advertised it will be a good sale. It is a fact that just now your horse is more popular than any other horse or any other breed of live stock that we are called upon to sell, and I am a hog man and a cattleman, but we are proud of our heavy horses, our big mules and big jacks. Monsees and other men have helped to put Missouri right on top as a mule State. He has increased the size of our mules and if you increase the average size of the farm horse in this country you will do a great deal for your country.

THE VALUE OF A GOOD STALLION.

(S. T. Simpson, Department of Animal Husbandry, University of Missouri.)

S. T. Simpson.

Our State is noted for many good things, including saddle horses and mules. While we pride ourselves in producing some of the best cattle, sheep and hogs, we seldom find Missouri draft horses among the tops of the sales or shows. This is probably the result of various limiting factors, among which is the failure of many mare owners to fully appreciate and recognize the value of a good draft stallion.

It is impossible to say in dollars and cents the value of a good draft stallion to any community or state. There are a few figures which should prove interesting and give us an idea of what results might be expected by using the best stallions obtainable instead of the inferior individuals so common in our State at present. Statistics show us that Missouri has a relatively high valuation placed upon most everything except horses. Unfortunately, the exact valuation of draft horses is not obtainable, owing to the fact that light horses are included, but they should raise instead of lower the valuation of horses in Missouri. The 1911 year book of the Department of Agriculture gives our horses an average valuation of $102 per head; Illinois horses are valued at $115; Iowa, $114; Indiana, $118, and Wisconsin at $124 per head. Surely this higher rating is due to the production of better horses. Whenever we think of producing better live stock of any kind, we immediately think of the sire as being the most logical and successful channel through which this might be accomplished. And so it is that we must sooner or later realize the importance of using nothing but the best stallions if we are to succeed in the draft horse business.

The first cost of a first-class pure-bred stallion is not exorbitant when we compare his produce with that of the grade or scrub of indiscriminate ancestry. The $10 that you pay for the service of a common mongrel is high, while the service from a good stallion is cheap at any price. Seldom do we find a difference of over $5.00 or $7.50 between the grade or scrub and the high-class stallion standing for public service, yet that small difference will invariably amount to from $25 to $50 in favor of the better sire by the time the colt is ready to market. Missouri has within her borders something over one million horses. If we could add $10 to the value of each horse in the State, the wealth of the horsemen of the State would show a substantial increase.

The problem before the Draft Horse Breeders' Association and those vitally interested in the future of the draft-horse business of the State is to devise a means of controlling the sale and standing for public service of those stallion of doubtful merit. Most men would willingly discriminate in favor of the better horse if they only knew the possibilities of such a course. How we may best accomplish this end is yet to be determined. Undoubtedly a law enforcing publicity in the way of a posted veterinarian's certificate and a statement of the breeding of stallions would bring favorable results. It seems that in the meetings of the Missouri Draft Horse Breeders' Association the subject of a stallion law should find favorable consideration, because it is upon the use of better stallions that the reputation and advancement of Missouri as a draft horse State depends.

MISSOURI'S DRAFT HORSE PROGRESS.

(Harry W. Graham.)

Harry W. Graham.

That Missouri has, during the last few years, made great advancement in draft horse breeding, there is no doubt. We all remember that it has been but a few years since our State was overrun with the little 14 to 14½-hand horse that later became famous as the Boer-war-horse. Up to that time the best of this class of horses would bring about $35, but the demand for them by the English government soon put them up to $65 and $75 in the country. At this price it did not take long to clear the State of the major portion of them, for, as the price had been doubled, every boy, hired hand and farmer that possessed one of this "no-account-sort," rushed them in to town on "buyers' day."

Horse buyers and dealers of our city market did a rushing business for three years in this sort of trade. They were making money out of it at turning them over to the English government at $125 per head and purchased nearly everything offered, for the few "rejects" they had, they could afford to give away. It was a peculiar experience in the history of the American horse, but providential, for it made an outlet for our "no-account-sort."

Being rid of our little stuff, Missourians in many localities improved the opportunity by investing the money secured for these little horses in draft horse blood. In two or three localities importers sprung up and importations were brought into the State. In other localities, dealers sprung up who secured their supplies from other importers on order. Horse companies were formed in rural districts and here and there a fine big draft horse would be placed, purchased by a local company of farmers. The result the following year or two was a most remarkable change in the type of foals that appeared in the pasture on many of our Missouri farms. It was a surprise to the farmers themselves and they were offered for these foals at weaning time more money than they could get or would ask for the dam of the foal. This was the first move of progress with the draft horse in this State. About that time, Dean Mumford, who was in charge of the animal husbandry department then, managed in some way to get a liberally condensed appropriation from the State—I don't know how, or much about it, except that I know he had to go begging over the country to find a few draft mares that would fit the amount he had on hand to pay for them. Anyway, he did mighty well with what he had or the amount furnished him to purchase with. With these few mares he began an educational demonstration of quick profits to the Missouri farmer in the production of the draft horse. He gave lectures over the State in the interest of the draft horse and extended an invitation to farmers to visit the Agricultural College and see Missouri's draft mares at the experiment station.

I remember my first trip to the college or experiment farm. I had heard Professor Mumford talk about the fine draft mares there and extend his invitation to visit the farm, and I wanted to see what he was doing there. He showed me the mares and I think a foal or two, and I admired them very much and was glad to know that the State of Missouri was doing something in this line. But when I asked him to see the sire of the foals, I was greatly surprised and as a Missourian, humiliated to not a small degree. His reply reminds me of the verse:

> Old Mother Hubbard, she went to the cupboard
> To get her poor dog a bone,
> But when she got there, the cupboard was bare,
> And so the poor dog had none.

He told me that the State had no stallion. To my mind this sort of progress was like climbing a hill one step and sliding back two. I lost interest in the State's ability to give me any beneficial demonstration in draft horse breeding, and the only knowledge I gained from the trip, so far as draft horses were concerned, was an insight as to something of the type a draft brood mare should be to perform her part on the Missouri farm for profit. Professor Mumford was only in a position to give me or furnish me with half the information that I should have received on that trip, for the sire in a herd constitutes half the herd when it comes to reproduction. And I venture the assertion that every other visitor who was interested in draft horses and visited the State college at that time was as much disappointed. In fact, I know that many were, for their comments indicated as much. This was progress with a handicap.

But the State has made progress with the draft horse outside of the demonstrational work at the experimental farm. Following the outside work or what they call here at the college, extension work, I believe, of Dean Mumford, came the work of Prof. Trowbridge. For the last four years he has been doing a wonderful work in the interest and progress of the draft horse in Missouri. A draft horse organization has been formed, largely through his efforts. Men interested in the business have been brought together and made to feel that they are not standing alone in an effort to push forward the great cause of breeding better horses. Professor Trowbridge has secured the able assistance of Secretary John P. Stinson of our State Fair and the assistance of the State Fair Board, in offering better inducements and more classifications for draft horses at the State Fair. And I was very glad to see these efforts meet with success, when last year and year before last the showing at the State Fair was increased by fifty per cent more exhibits in the draft horse classes than any former year. And those of you who were there will remember how well the seats in the live stock pavilion surrounding the show arena were filled not only with interested farmers, but their wives and children were there with them to study the lesson in draft horse types and quality. To my mind this interest demonstrated by these farmers and their families at the show arena is the greatest indication that Missouri is actually making progress in the breeding of the draft horse. But it is largely a natural progress. There are many things that may be done that will greatly help the cause.

One thing is the lack of publicity in this State on the part of the dealer and importer and others who have stock to sell. Farmers are buying automobiles because the manufacturers of the automobiles are creating a demand or desire for their machines through advertising in the farm papers. There are many manufactured articles, such as cream separators, manure spreaders, gasoline engines, etc., that the farmers are buying by the thousands because they are extensively advertised and given paid publicity in the farm papers. If the horse breeders, importers and horse associations want to make Missouri a leader in draft horse production, they can greatly aid the cause by advertising. It pays to advertise. It is the greatest known leaven in the advancement of commercialism of the age. It has become a national "habit." The people of America, the great army of consumers, look for your advertisement and expect it. If you do not think so, go to the city, watch the women as they peruse the Sunday morning paper for bargains on Monday morning. Then take up a position of safety inside one of the entrances of these great stores that advertise and watch the scramble of thousands and thousands that crowd and jam these stores. I remember reading last winter of an instance in one of these stores where the crowd was so great the elevators would not carry them fast enough, and women actually slid down the balustrade of the stairway and fought over articles on sale.

Advertising pays in the draft horse business as well as any other. Take for instance the great annual sales at Bloomington, Ill., where hundreds of breeders over the state assemble their surplus horses and watch the great crowds that come there to buy from all over the country. What makes them attend in such numbers? Liberal publicity. Take our own Monsees, here in Missouri, with his great annual jack sale. What is it that draws these great annual crowds to his sale from the rural districts extending from coast to coast? Liberal publicity.

Now I am going to give some facts about Missouri horsemen and the progress of the draft horse in Missouri as I find the conditions outside of the State, and I believe these facts will bear me out in what I say about more publicity and the need thereof.

A good way to ascertain what progress we are making with the draft horse in Missouri is to lay ourselves down, as a State, along the side of other or adjacent states. Are we keeping pace with any of them? Let's see what Secretary Wayne Dinsmore of the American Percheron Society says. According to his statement, Illinois stands first in the production of the Percheron. His figures show that 10,758 American-bred Percherons were recorded from August 1, 1910, to May 1, 1912; 2,786, or 25.8 per cent were bred in Illinois. He claims that Illinois is the center of the Percheron breeding territory, and that the territory includes six states—Illinois, Indiana, Ohio, Iowa, Nebraska and Kansas. He does not even mention Missouri, or intimate that it is even considered as a Percheron breeding state. And yet, we probably have more of this breed in Missouri than any other breed of draft horses. If we draw a map of the territory he counts as Percheron breeding territory, we find we are surrounded by Illinois on the east, Kansas and Nebraska on the west and Iowa on the north. The question arises, can the trouble be attributed to soil and climatic conditions? No, we have a great soil and superior grazing lands, if not greater, in a productive sense, than any of these states. Our climatic conditions are even more favorable than those of the states named, for draft horse breeding. With pastures of luxuriant blue grass, supplied with rippling streams of pure, clear, wholesome water, dotted on either side with native shade trees in summer, we find our live stock grazing in the open, enjoying the benefits of pure air and freedom of exercise until after the Christmas holidays, while the live stock of these other states have been housed up so long they think that winter must surely be half over. So the trouble is not the soil or climatic condition.

As a farm paper man traveling through these other states, visiting and soliciting these importers and dealers for their advertising and announcements for the Missouri Ruralist, I believe I have made some discoveries; at least I have learned something of what the horsemen of these other states think of Missourians as horsemen. Of course, I think and argue that they are wrong in their conclusions, but I may be mistaken, and they may be partially correct. But I am going to give you the picture as they have drawn it or presented it to me.

It is with great difficulty, solicitation, arguments and with many promises, that we get them to spend any money in the farm press of this State in advertising their stock. They say, "We have tried it before and the result was a loss of effort. We don't believe Missouri wants to raise good horses. Our experience with the Missouri buyer is that he wants something cheap. When he comes to buy a stallion we find that he regards his pocketbook too highly and does not give enough attention to quality, size, weight and bone. They want to buy stallions of us cheaper than we can buy and import them. They are not willing to give up the price for a good one."

I have been convinced that there must be some truth in their statements, because it is not only one of them, but all of the importers and dealers in Iowa, Wisconsin, Illinois and Indiana. The story is similar all along the line. It seems that our reputation for buying good seed in this State is in bad repute. Are their statements correct? Are there any fruit by which we may be judged?

How many $10,000 stallions has Missouri purchased? Illinois has one, and last year New Hampshire raised it to $10,500.

How many champion draft horses did Missouri produce at the leading live stock shows of last season, outside the Missouri State Fair and the American Royal? None.

What is our record at these two shows? At Sedalia, we allowed Illinois to carry away the championships in Percheron stallion and mare. In Shire and Clydesdales, we managed to retain these championships within the State, but it is questionable if we would have done so had there been any outside State competition. At our American Royal show the record is not as good as the State Fair record.

How many big 1,750-pound to ton geldings does Missouri furnish the commercial world in a year? And that reminds me of an order placed in Chicago last winter for two carloads of sound 1,750 to 1,800-pounders and after three months but ten head were secured that would fill the bill.

I believe the draft horse breeder should be guided by what the demand is calling for. If it is true—and the market reports confirm it—that the best and remunerative demand for commercial horses, centers on the geldings with greatest weight, strongest bone and most muscular development, then why not produce them? If we have not the seed at hand that will produce that sort, then are not we going amiss to try to coerce the commercial world to take something it does not want, simply because we produced it from unpopular seed at hand?

While Missouri has made great progress in the breeding of draft horses over a few years ago, there is one thing we must not forget. The commercial demand for heavy horses is calling for greater things in the individual horse for work. Greater weight, greater perfection, greater size, better bone, bigger hoof and better feet, with greater quality combined. Capital stands ready to be given in exchange to the man that will produce this kind. It will always be so, for there is work for the big horse to do that can be done in no other way.

Let's get together then and help, and assist our Agricultural College and the efficient force here. Let's urge upon our Legislature the importance of a greater appropriation in our agricultural and experimental educational institutions, that better equipment and the highest types of live stock may be secured with which to do demonstration work with for the information of the State's farming classes.

Let the buyer of stallions buy none but the best, and he will do his part in turning the eyes of the horse world upon the State. Let the owner of the brood mare secure the services of none but the best sires, though he be forced to an adjacent county, and he will be performing his part, and then let everybody that has a good one, go to the State Fair and enter him in the draft horse classes, not only of his State, but at the fairs and adjacent states, and when we will have carried away a few of their purple ribbons and brought them to Missouri, like we have in other breeds, then the story we now hear will be changed.

CLYDESDALES IN MISSOURI.

(F. L. Crosby, Mexico, Mo.)

Horse breeding has long been one of the important features of live stock production in this great live stock producing and agricultural State. In fact so important has been the production of horses and so great has been the progress made, that at least in the case of one breed, namely, the American saddle horse, Missouri today enjoys a reputation unexcelled by any state as a producer of the highest type of this popular breed.

F. L. Crosby.

But until very recent years draft horse breeding has been sadly neglected in this State. I think this was due, partly because of partiality for the saddle horse, but mainly because the value of the draft horse on the Missouri farm was so unknown and consequently so unappreciated by the Missouri farmer. Realizing these facts, the draft horse breeders of Missouri organized themselves into an association which they named "The Missouri Draft Horse Breeders' Association." The object of this association, as I understand it, was not to antagonize nor hinder in any way the breeding of any other breed, but to lend help to one another and to advertise and demonstrate and to get the Missouri farmer and breeder to realize the usefulness and profitableness of the draft horse on the farm.

There are several popular breeds of draft horses now being bred and imported into the United States, all of which have their merits, just as there are several breeds of beef cattle, dairy cattle, sheep and swine, all having been developed to a high degree of perfection, yet each breed possessing certain characteristics peculiar to itself. So that it only remains for each individual breeder to first determine what kind of live stock he wishes to produce, then select the particular breed which he considers best adapted to his purpose, first taking into consideration the conditions he must encounter, then put forth every effort toward producing animals that most nearly approach his ideals of perfection.

I have undertaken the work of breeding Clydesdale horses, and as yet have never had occasion to regret my choice. The primary home of the Clydesdale is Scotland, a country with a most enviable reputation for producing the very best in all classes of live stock. That country still leads in the production of the highest type of this great breed of draft horses. Only last year a Clydesdale stallion bred and owned in Scotland, sold at public auction for $47,500, the highest price ever paid for a draft stallion of any breed in any country.

In America, the Clydesdale has built up and maintained a reputation as a good seller on the city markets, a consistant winner in in the show ring and a most useful and profitable horse on the farm.

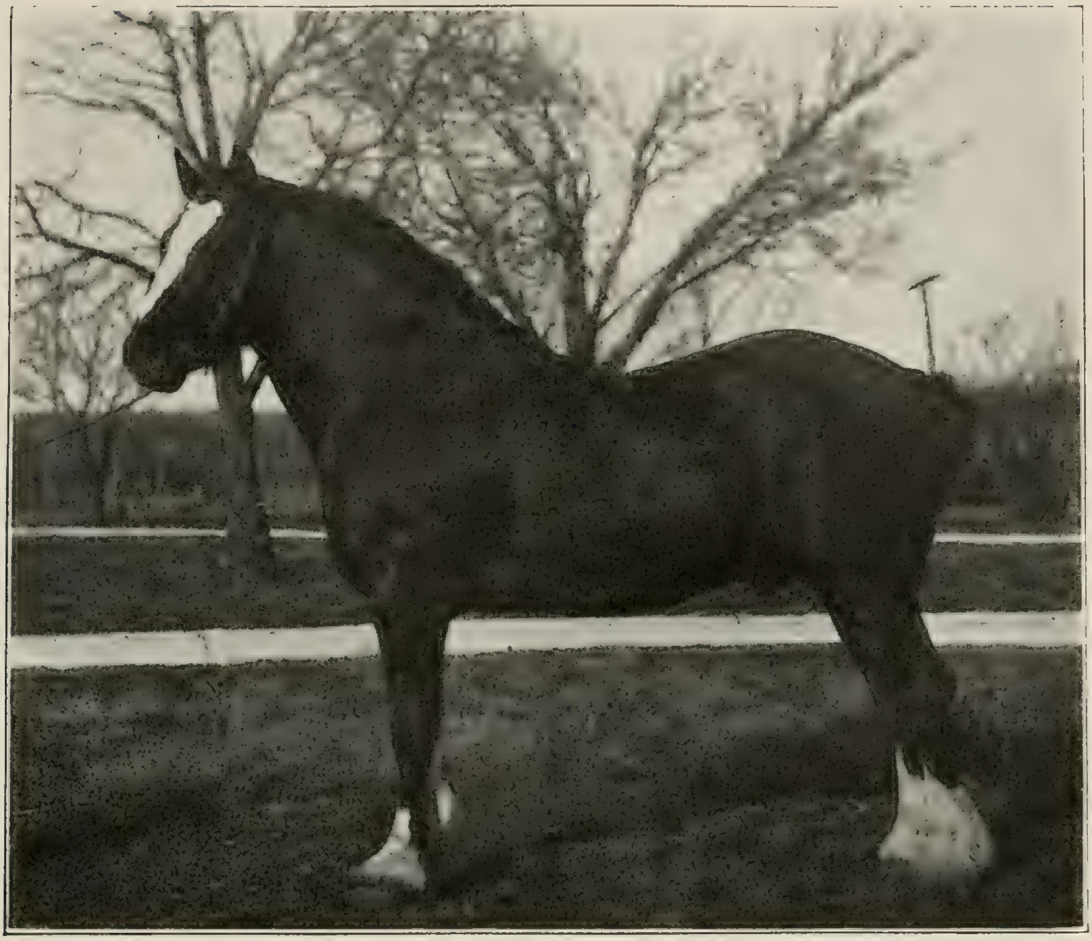
He possesses an individuality that at once attracts the attention and admiration of the most casual observer, while a careful study of his massive form which enables him to draw heavy loads, his grand conformation so beautiful to look upon, his superb action at the trot and his strong business-like walk so desirable in a draft horse, his big flat flint-like bone with the very soundest of legs, feet and pasterns that enable him to perform years of work on the hardest of city streets, still remaining sound, his intelligence and his kind disposition so desirable in any horse, all combine to qualify him for service, pleasure and profit on the Missouri farm. And when the Missouri farmer comes to realize to what extent he can increase his profits by weeding out his little mares of little or no particular breeding and replacing with good big draft mares he will have made an important discovery and his only regret will be that he did not begin with the draft mares sooner.

I was somewhat surprised recently to read a report of the live stock values in Missouri as reported by correspondents of the State Board of Agriculture, in which report spring colts were, on December first, valued at $52.75 per head, yearlings at $76.70, two-year-old's $101.95, and three years and over at $126.60 per head. This would not sound quite so bad were it not for the fact that high grades and pure breds are included in this report and their values being much higher than the average, would cut down the value of a lot of these colts to a figure that means a loss to their breeders, and this means that a lot of Missouri farmers are not making the best of their opportunities, and the sooner they discover their mistakes and get right the better off they will be.

I would rather have one good big regular breeding Clydesdale mare for use on the farm and to raise colts from, than to have three of the ordinary little mares we find on the average Missouri farm. Two good big regular breeding draft mares and one combined saddle and driving mare or gelding, will do the work on an eighty-acre farm and raise colts—either horse or mule colts—that will sell for enough money at weaning time to support a small-sized family.

Clydesdale mares produce great mules; they give them size, bone, style, action and snap, all of which are essential elements in the make-up of a high-priced mule.

I know of a grade Clydesdale mare up near Mexico, that has been raising mule colts for a number of years. In 1909 she produced a horse mule that sold at weaning time for $150, in 1910 she had a mare mule that sold for $175 at weaning time, in 1911 she had another mare mule that sold for another $175 at weaning time. The owner then decided to raise some Clydesdale mares for his own use so he bred her to a registered Clydesdale stallion but she foaled a horse colt and I bought him at weaning time for $150. He weighed 720 pounds when five months and twenty days old. The mare is in foal again to the same horse and if she has a mare colt I don't expect to buy it, for it will not be for sale. Of



Clydesdale stallion, Gallant Sturdy 13873, owned by F. L. Crosby, Mexico, Mo.

course this is an exceptional mare, but any good big grade Clydesdale mare ought to produce a colt, either horse or mule, that will sell for not less than $100 at weaning time, but if the foal is a filly colt it should be kept on the farm and not sold at all.

My advice to breeders would be to sell the horse colts at any time they have a good buyer, from weaning time up to four years old, but when they get a good mare colt don't sell her until she has been tried out as a brood mare, for good brood mares are away too scarce in Missouri, and you cannot buy the best in other states for the reason that the best are not for sale.

When the foal is about two months old it will be eating oats out of the trough with its dam, but after it has learned to eat well it is a good plan to feed it in a separate box by the side of the mother, and when 4½ to 5 months old it is ready to wean. Keep on feeding it oats and let it have grass as long in the fall as possible, then feed it all the clover or cowpea hay it will eat, together with shelled oats and an ear or two of corn per day until grass comes the next spring, then gradually take away the grain and let the colt run on good pasture in which there is always a supply of good pure water. Then in the fall begin feeding oats with just a little corn again in time to keep it at all times growing nicely and winter it the second winter pretty much the same as the first. Never let the colts remain out in a cold rain and never let them want for a drink of good pure water.

The average grade Clydesdale colt out of a good grade dam that will weigh from 1,500 to 1,700 pounds if cared for as above suggested, should come out of the second winter weighing from 1,300 to 1,500 pounds, and is then ready to "earn his living by the sweat of his brow" and a reasonable amount of work at this age will not hurt him in the least. I would advise breeding the big growthy mare at two years old but late enough in the season that she will not foal until the grass is good the following spring.

Now, I want to say something in regard to the management of heavy horses. Remember that the draft horse was made to draw heavy loads and not for rapid travel over the road. If you must go in a hurry take a horse that was built for fast work, or else go in your automobile, for it is just as unreasonable to expect the draft horse to do fast road work as it is to expect the road horse to draw a load that was intended for a draft horse. A draft horse should never be driven faster than a walk except for short distances when he is needing exercise.

The Clydesdale is a most willing and faithful servant if properly handled. It is not necessary to employ an expert to break, train or develop him. His natural disposition is to be gentle, and if you have never abused him, all that is required to break him to work is to put the harness on and let him get used to wearing them, then teach him to start and to stop at your command; he will then be ready to hitch to the wagon and if you will watch that he doesn't get frightened at the noise of the wagon, in a very little while he will begin to adjust himself to the new conditions and you will be surprised to see how fast he learns and how nicely he handles. But because he is gentle, don't get the mistaken idea that he is a "deadhead" or a "dummy" and strike him with the ends of the lines without first even speaking to him when you want him to go, like some men do when driving mules. The mule might forget or make you think he had forgotten until he got a chance for revenge, but the sensitive horse will not forget and if you continue giving him ill treatment you will soon have a ruined horse.

You do not need a "blacksnake" whip to drive a Clydesdale—just remember that he must learn what you want him to do before he can do it and try to use at least as much sense in teaching him as you expect him to use in learning what you want him to do.

The man who owns good draft horses and then applies the "golden rule" in his treatment of them will be rewarded by both good services and good profits. Show me a farm on which is owned good draft horses well kept and I will show you a prosperous farmer, and this truth will apply to neighborhoods, counties or states. If you have any doubt about the truth of this statement just take a trip to the most prosperous sections of Iowa, Illinois, Indiana or Ohio and see if you don't find the draft horse there to the exclusion of all other breeds with the exception of an occasional light horse necessary to do the fast work on the road.

Missouri ranks well near the top as compared with her sister states in the production of all classes of live stock with the single exception of draft horses, but in this important business we are far behind our sister states when we should be in the lead, for we have every natural advantage in our favor—cheaper land, good grass with a longer grazing season and milder winters. Let us get busy and let us have more "Clydesdales in Missouri."

SOME FACTORS WHICH LEAD TO SUCCESS IN DRAFT HORSE PRODUCTION.

(Hon. W. L. Houser, Mondovi, Wisconsin.)

It is with a large measure of pleasure that I appear before you this afternoon for the purpose of modestly giving to you some of my experience in horse breeding, more especially in draft horse breeding. I do not claim to be an authority. I have not yet met the man who in my judgment has the last word on the intricate problem of producing draft horses or any other breed of horses. The business is so ultra-scientific, so hazardous in its nature, that not up to this time have any rules been laid down that safely outline the course we must pursue to make it a one hundred per cent business. Recently at Toronto at a meeting similar to this, a farmers' annual gathering, a demonstration was being made before the class and horses were lead into the ring and judged by the assistant professor of animal husbandry. His principal or chief, a real Scot, being ill, but not so ill but that he kept his seat and witnessed the proceedings. He was not satisfied with the way the assistant placed the horses and he criticized his judgment, and the assistant defending his action gave the reasons why he placed this certain horse at the head of the class, etc. "Your reasons are wrong," said the professor. About this time a farmer who had listened to the controversy said, "Doctor, when you and your assistant disagree, how are we farmers to know what to do, or what horse to select as the best?" The professor's reply was, "Hoot, Mon, dinna you ken that I am boss."

Now, I am not boss here, but if my little experience will be of any benefit to you I will be glad, indeed, to relate it to you and to give you so far as I can, in the limited time that I feel I must keep you, the system of handling horses in our State, more particularly on my farm.

Conditions are quite different there from the conditions we find here. It seems to me that if I lived down here in Missouri with your splendid limestone soil, your wonderfully rich grasses, your pure water, and in addition to that, your almost ideal climate, that I could do bully good raising horses. Speaking in a comparative or relative sense, it seems to me that you have a vast advantage over horse breeders who live in that frozen state of the north, of which, however, we are inordinately proud. But there we have to feed and house for at least six months during the year at great expense, while you down here are pasturing and raising your horses on cheap feed without the extra expense of feeding and stabling we have to meet; so, therefore, it occurs to me, in looking at the situation here, that Missouri has wonderful opportunities for the development of this very important industry, and a very profitable industry too, bcause I agree with the distinguished and talented gentleman who pursues the profession of auctioneering that there is no danger, not at least for years to come, that we will suffer any material setback in the way of prices of draft horse flesh. As he says, it is the original and necessary motor power that no inventive genius so far has been able to successfully supplant. I rode across the state of Dakota last year in company with the president of the North Dakota university, a wonderful man he is, a man of genius and vision. We were discussing that wonderful state as we rode for hours over that level rich prairie, and I remarked that I could see now why I couldn't bull or bear the Chicago wheat market, and I said, "Your resources are wonderful, aren't they?" "Oh, yes," he said, "but you don't see all the resources of this state," and he went on to describe to me the great underlying mines of coal in that state, their great value, and said, "There is a greater asset in North Dakota than that," and I asked him what it is. "Why," he said, "it is the wind, and we have it in abundance." After I had indulged in my laugh he said that he was serious about his statement. He said that wind must be harnessed, and that it would be harnessed, and that it would not be permitted to go to waste. Just about that time you will remember it was announced that Edison had completed his wonderful storage battery. "When this battery is put upon the market the farmer of North Dakota will be able to harness the wind to it, store all of the electricity and operate his machinery, and I look for the time when the North Dakota farmer will sit upon his front porch, touch a button and start all his operations by the means of the wind," said the president. Now, that day has not come, and it will not come in your generation or mine, therefore we must largely depend upon the horse for primary power. The demand today is for good horses. The demand today is for heavy horses. That goes without saying; we all know that. The question is how to produce these horses. I think the proposition has been thoroughly discussed here today that the market demands a large, sound, good-looking horse. I am going to confess here that I don't breed horses altogether for profit. Profit is necessary. Of course I must live, my family must live. But I breed horses because I like the business. You know it is an axiom with me that a man ought to know definitely before he seriously engages in any occupation that it will be congenial and agreeable to him, that it will bring satisfaction and contentment, that it will incite enthusiasm and inspiration in him. I have been breeding horses or been interested in horses, nearly all my life for this reason. I tried to make a lawyer of myself, without satisfaction. Then I went into the newspaper business. I edited and printed a newspaper about one-fourth of my lifetime. That is a pretty good business. If a fellow is earnest and honest there is no line of endeavor in which he can do more good than through the columns of an intelligently and honestly edited newspaper, bringing truth to his readers and through it an education that will add to the sum total of their happiness and contentment. But the yearning for the soil planted there by the Creator grew on me constantly, until when the time came when I was able to own and operate a farm, I acquired one and have been engaged exclusively in conducting it and raising horses and live stock. I have learned some things, and unlearned a good many, and it is the experience of every man, especially if he goes into the horse-breeding industry, that he will have a great many misunderstandings removed before he gets through with that line of work.

First, how do I produce a horse that commands the highest market price and that satisfies my ambition as a breeder? One is just as essential to me as the other. I breed Percherons and Clydesdales. I learned early in my experience that there is no sire too good for my own use. Before I was able to own one of my own, such as I thought suitable for my use, I would travel many miles, even ship my mares many miles, to find one that would beget the kind of a colt that I wanted. Of course if you are extensively engaged in the business you must of necessity own a sire of your own, and in answer to the gentleman who has brought up this ever-present question of being swindled by the organization of horse companies by unscrupulous dealers, I will say there are reputable dealers in horses the same as there are honest lawyers and merchants, and men engaged in other lines of activity, and to guard against these iniquities it is only safe to deal with that kind of a man, and when I first determined to buy a stallion on my own account, I sought out what I considered a reputable importer, and asked not only that they sell me a horse, but they assist me in selecting one that they believed would answer my purpose, and it was just as much to their interest that they give me honest service in selecting such a horse as that I buy such a horse, and they gave me that assistance and I do not regret that I purchased that first Percheron stallion from Dunham of Wayne, Ill. I have dealt with him ever since that time, buying several stallions, and I have never yet found him other than a reliable, upright man, and this can be said truly about many other firms dealing in stallions in this country.

Very well, now we have the sire. If you are engaged in purebred horse breeding, it involves the investment of a large sum of money in mares. You cannot buy today a first-class pure-bred Percheron or Clydesdale mare for much less than $1,000. If you intend to engage in the business on a large scale, of course this involves a large outlay of money, but as ordinary farmers pursuing the business in the average way, you doubtless will have common, ordinary mares, such as are raised here in Missouri, and from these mares selecting the best ones you can you can grade up until after you have made a few crosses you will have an excellent draft mare if you properly select sires.

First of all, breed in line. Don't mix them up. If you are breeding Percherons, select the best sire you can find of that breed, and then breed that sire to your best mares. These mares' fillies at maturity should be bred to a suitable Percheron stallion. In a short time practically a pure-bred offspring will result. In this way you will establish a class of animals demanding the highest possible prices in the market.

Where I live we have been breeding Percherons for nearly forty years. The very first horse brought in there was a splendid type of the Percheron stallion. Since that beginning we have been grading up until we have a class of horses there hard to distinguish from the best pure bred, and they command a price from a buyer who goes there every week in the year and takes away our surplus that has made that the market center of that region of the country, and the horse industry today in my town, as the result of that system of breeding, has become the most important branch of the farming industry there. It brings thousands of dollars into our city and community every year.

On our farm we aim to keep our mares in just ordinary condition. We work them moderately. Every mare on the farm is kept in the collar every day, when she does not have a colt following her. I like to work them up to the very day that they foal, working them temperately, not overdoing it of course, but keeping them constantly exercising and giving them ordinary farm work. If you turn them out in the pasture a great many times I have found they will fail to take the necessary exercise. When they get very heavy they will find a comfortable corner and stand there for hours at a time. I find it better if we work them. As soon as the mare foals she is taken out of the harness and given perfect liberty.

There are three important fundamental essentials in horse breeding: First, the right kind of a sire and dam; second, feed; third, care. Perhaps the two latter may be joined. Under the head of care the most important of all is cleanliness. When our mares approach foaling time we have prepared for them a clean, bright, attractive stall, the best on the farm, and we keep it clean. We keep it thoroughly disinfected, because this is very important. I don't care how careful you are, I don't care how carefully you observe the rules that may be laid down by the experiment stations or the veterinarians as to the way you shall handle your mares, you are going to lose a large per cent of the foals, and the principal cause of loss is what we call infection of the navel. Much the greater number of our colts that die, die from this disease, and sometimes we cannot understand why they do. We thoroughly disinfect the navel as soon as the foal comes and yet within a few days, possibly, we notice the foal is ill and finally the navel disease or infection develops and when it does, if a bad case, you might as well knock the foal in the head. So therefore it becomes very important that the causes for navel infection be obviated to the greatest degree. After the foal comes and is safely on its feet, it is but with little difficulty that we bring it along to the time when it should be weaned. We feed our mares liberally during the time they are nursing the foal. I think perhaps there is no way in which you can invest money so profitably as by feeding the mother liberally while the foal is following her. The foal will begin to eat crushed or whole oats at an early age, and should be given these in abundance. It is a very good plan too, if possible, to teach it to drink a little cow's milk. Now I do not advocate the use of milk except in moderation. I am sure, although I will not lay this down as a law, that a colt may be easily ruined by over-feeding of milk. I am quite certain that recently, within two years, I practically set back a colt that I was raising for show twenty-five per cent by overfeeding him milk. He got so fat that his back went down; when it came time to show him I could see that he was overdone and I am quite sure I overcrowded him by the too liberal feeding of rich milk, so therefore I would not advise too liberal feeding of milk, and I think it more safe to feed the weanling skim milk than whole milk. We must use feed high in protein, so as to build up bone and muscle and make the colt not only large but give it that fibre and strength essential to the making of clean bone. We feed our colts through the wintertime after they are weaned, which is at about four months of age, all they will eat of oats, bran and clover hay. I don't mean by that that we turn them loose to the feed bins, but we learn just about how much they will clean up nicely and give to them practically all they will eat.

A critical time in a colt's life is at the yearling age. I feed it liberally as a yearling. We keep the yearlings thrifty and improving all the time. We have found if we don't do that they will get considerable setback during the summer of their yearling form. Of course, after we get them through the yearling period it is easy to get along with them after that. We feed little corn to colts. I like to feed them some and do give them a limited quantity. Of course we show some horses. Now, our system of handling colts for show is quite different than the system used for growing them out for the general market. They must have a higher finish, must be in the pink of perfection, or else when you lead them into the show ring in comparison with others you are likely to be ashamed, and there is nothing so distressing as to be given the door in the show ring. I can testify to that, too. Showing is for the expert, not for the ordinary farmer. There is not much profit in showing horses unless you are a breeder or dealer in pure-bred stock and are breeding and importing for sale. The ordinary farmer can scarcely afford to indulge in the luxury.

We breed our mares about thirty days after the foal comes. Our observation has been that it is much safer to wait thirty days and that we get a larger percentage of colts with less complicated results than we do by breeding in nine days. Nature has had time to resume her course and we get much more satisfactory and profitable results. Only infrequently have we bred a mare on our farm earlier than thirty days from the date of her foaling.

Gentlemen, it is a most enchanting business, and if you are so fortunate as to breed an international champion, you will have to at once consult the hat maker, because you will need a larger size. I had that experience, too. But it is worth while, it is an achievement that is satisfying and will last, and I would not discourage young farmers here in any manner, although my remarks may have that tendency, from attempting the extreme in the way of horse production. It may come your way to breed a champion. This mare of which Professor Trowbridge has spoken, Princess Fortune, possibly the greatest draft mare ever produced in the United States, and perhaps in the entire world, was a very insignificant looking foal. She passed through a siege of distemper that I thought had absolutely ruined her. In the fall time of her foal year I had her hid away from the sight of visitors, for she was not fit to be seen. Mr. Will Ade, of Indiana, came to my farm and bought her sire and I offered her in with some others at $175, and he refused to take her, so unattractive in appearance was she. But recovering from this distemper she took a start in the spring and with extra care, by fall time she had become a marvel and never did she meet defeat from that time on until her stable companion defeated her in the show ring at Chicago because she had raised a foal and was not in show condition. So you see a plain farmer under ordinary conditions was able to produce this world renowned Clydesdale mare, and it is possible for any farmer here in Missouri to duplicate that achievement. You will pardon me in referring to this personal matter, because I believe that in all my life's activity I have never done anything of which I have been so proud, and in which I am so justified in that pride.

Missouri Farm Management Association.

OFFICERS.

President—J. Ed Hall, Lamonte.

Vice-President—I. N. Gartin, Darlington.

Secretary-Treasurer—R. S. Besse, Columbia.

Advisory Board—D. H. Doane, Columbia; F. B. Mumford, Columbia; E. P. Dysart, Columbia.

WORK OF THE ASSOCIATION.

(R. S. Besse, Secretary-Treasurer.)

R. S. Besse.

The Missouri Farm Management Association was organized in 1910 for the purpose of co-operating with and organizing those farmers in Missouri who desire help in their farm management problems. Many letters were coming into the farm management office from all parts of the State asking questions concerning their farm—rotation, marketing and labor problems. So on the basis of these numerous questions and from the requests for farm visits and assistance, the association was formed with 75 charter members. It has increased its membership to date of May, 1913, to a total of 350 progressive Missouri farmers. For a time until the membership became too large to be handled in this way, visits were made to individual farms and crop systems and rotation plans discussed. The department of farm management co-operating with the United States Department of Agriculture at Washington worked through the association members in carrying on their work of investigation and demonstration.

The farm management association, however, is now too large for one or even two men to handle the work by personal visits, so that portion of the work is being handled through correspondence.

A labor bureau through which the members may secure more adequate farm help is a department of the association doing a good work. Many calls come from members desiring help and numbers of requests from men desiring work. Through the association these men are brought together.

The information bureau, through which many questions concerning the farm will be answered as thoroughly and quickly as possible, is another source of benefit for the members.

The Farm Management Association holds its annual meeting at Columbia during Farmers' Week, when plans for the succeeding year and general policies of the association are discussed.

THE COLLEGE OF AGRICULTURE AND THE FARM ADVISER.

(F. B. Mumford, Dean of the College of Agriculture.)

The work of the College of Agriculture and the Agricultural Experiment Station has had a profound influence on agricultural practice. New methods of conserving soil fertility, more economical methods of feeding live stock and practical demonstrations of efficient methods of treating fungus and insect diseases have resulted from the investigations conducted by the college.

The college has attempted to carry a knowledge of the results of these investigations to the farmers themselves by bulletins, by lectures at farmers institutes, special trains, branch short courses in agriculture and by other means. The demand upon the institution for this kind of service has become so great that it is impossible to supply it without seriously interfering with the primary work of the college and experiment station.

In order to meet this growing demand, and in order to bring to the farmer quickly the results of investigations which have an important bearing upon agricultural practice, the idea of locating an agent or representative of the college in a county was conceived. By this means we hope to bring to the farmer on his own farm the benefits of the investigations carried on at the College of Agriculture and experiment station.

So important is this work regarded by the Federal government that Congress has made a special appropriation to carry on this project in co-operation with the agricultural colleges. There is now employed jointly by the United States Department of Agriculture and the Missouri College of Agriculture, a state leader, who devotes his entire time to co-operating with counties in securing competent farm advisers to work in the various counties of the State.

The general plan of work has commended itself so well to the people of Missouri that many organizations like commercial clubs, bankers' associations and others, have been ready to supply by private subscription the funds necessary to make this plan effective. Such contributions will result in great good to the county, but in general, in the opinion of the college, the permanency of the work of the farm adviser requires that his salary be paid in part by the Federal government, in part by the State, and in part by the county through its county court. He thus becomes a public official, under obligations to no private corporation, association or business organization of any sort. It is true that considerable sums of money can be profitably used by the farm adviser for the promotion and agricultural development of a county, but in general, and as far as possible, the salary of the farm adviser should be paid as stated above.

It must be clearly understood in the first place that the College of Agriculture and the Federal government will not locate a farm adviser in any county until there is a sufficient demand on the part of the people to justify such an appointment. The success of this plan depends upon the hearty co-operation of the people, and especially the farmers. When public sentiment justifies the consideration of such a plan, an adviser will be appointed under the following conditions:

1. Application should be made to the College of Agriculture for a farm adviser. Before any definite steps can be taken, the county court or other local organization must be ready to appropriate one-half of the salary of the farm adviser and to sign a contract with the college covering a minimum period of three years.
2. The College of Agriculture and the United States Department of Agriculture will also agree to pay one-half of the salary of the farm adviser for a period of three years.
3. The College of Agriculture assumes the responsibility of selecting a man who must be approved by the county court and will supervise and direct his work in the county.
4. The minimum salary of a farm adviser is two thousand dollars a year. In some cases larger salaries than this are necessary in order to secure the best men.

It is important to emphasize the fact that all the arrangements and details connected with the appointment of a farm adviser in a county must be arranged to the entire satisfaction of the local community. The College of Agriculture and the Federal government do not desire to place a man in any county until the county is ready to co-operate with them in this enterprise. The demand upon the institution for the appointment of farm advisers is so great that the college does not feel justified in going into any county until the people in that county are satisfied in their own minds that such an official is wanted by the majority of the people.

The future agricultural greatness of Missouri depends upon the establishment of permanent systems of agriculture in the State. Declining soil fertility and a decreasing rural population, combined with an increased value of land, require a more skillful type of agriculture. No system of agriculture can be permanently prosperous unless it is based upon a practice which will conserve the fertility of the soil and at the same time be profitable.

The function of the farm adviser is to help in the redirection and reorganization of Missouri farms for the purpose of improving and conserving the fertility of the soil and for the purpose of making agriculture more profitable as an occupation.

5. The co-operation of the college and the government in the plan is conditioned upon legislative appropriation by the State. If the Legislature appropriates funds to the college for this purpose, then the United States government will appropriate a similar amount and this money will be used entirely for developing the agriculture of the county. The college can not make any definite promises.

THE COUNTY FARM ADVISER PLAN.

(D. H. Doane.)

For many years the Missouri College of Agriculture has been investigating and working out the special farm problems of Missouri. During this same period of time the United States Department of Agriculture has been solving similar problems for the United States as a whole. A vast amount of valuable information has in this way been secured, and this information has been supplemented by careful studies of the methods used by successful farmers and the reasons for their success. To carry this information to the farmers of Missouri and to help to put it into actual practice on their farms, is the special function of the farm adviser.

Prof. Doane.

The first step in this plan was the appointment of a man to take general charge of the work and be equally responsible to the College of Agriculture and the United States Department of Agriculture. This man is called the State leader. His headquarters are at the College of Agriculture, Columbia, Mo. Counties that are considering the employment of a farm adviser should first communicate with the State leader; he can be of much assistance to new counties in helping them to avoid mistakes.

1st. No work is started in any county for a term of less than three years.

2nd. The government will pay one-fourth and the college will pay one-fourth of the total salary of an adviser employed in co-operation with them, leaving one-half to be paid by the county.

3rd. There is a State law which makes it possible for the county court of any county to furnish the county's part of this fund. Article VIII, section 701 to 706, Revised Statutes of Missouri, 1909.

4th. Those counties where the county court assumes the county's obligations will find preference with the college and government in this co-operation, because: (a) it is desired that every farmer in the county be represented in the county's part of the financial support of the adviser, which is done best through the county court; and (b) it is desired that the work be on a permanent basis. This cannot be done by yearly private subscription; it can be done through the county court.

5th. The farm adviser is appointed and in general directed by the college and government through their state leader, but appointment and direction is in each case only upon the advice and approval of the local county represented.

6th. A minimum consideration for the three years is $6,000.00. This amount is paid the farm adviser as salary and necessary traveling expenses in the county. Of this amount the county must raise half—$3,000.00. These figures express the least amount to be considered, and many counties are planning to pay more. It is a wise provision.

7th. In addition to the $3,000.00 for the three years, the county must also furnish the adviser with office and equipment, such as desk, stationery, telephone and necessary stenographic help. The farm adviser is required to attend a school of instruction at Columbia, Mo., held especially for his benefit. This school will continue from one to three weeks each year. The county is expected to pay the adviser's expenses while on this trip. Any working funds for such items as advertising, contests, displays in the office, etc., must be furnished by the county. In short the county should allow at least $500.00 a year to cover all incidentals.

8th. To assist in raising and administering the incidental fund and to be of general help to the farm adviser, there should be formed in every county a county farm bureau. It is this organization that is the actual head of the farm-adviser project in the county. It is the members of this bureau that the adviser works with and through, and from this group of men comes the spirit for better agriculture that ultimately makes the success of the movement.

It is not advisable for the organizers of the bureau to complete its organization, appoint permanent officers, or adopt a constitution until the adviser has started his work. Its officers and directors should aid, counsel and encourage him and he should have a hand in selecting those who can best act in this capacity.

It should be emphasized in all cases that under no circumstances will a membership to the bureau, a donation or a subscription in any form, give any individual a special claim to the services of the farm adviser. He must be free at all times to carry on the work as directed by those in charge, and cannot under any conditions or circumstances be at the beck and call of those who have given a dollar or five hundred dollars. It can be generally understood, however, that the adviser will work with those who want him to work with them, of course never bothering those who do not want him; and a good way for a farmer to be sure that the adviser understands his wants is to pay his dollar and join the farm bureau. After he has answered all the calls and requests from the bureau members, then he will naturally turn to those who desire his services but who have not seen fit to support the work with the bureau membership fee.

The order in which farm advisers are assigned to counties applying for them will be determined by the completeness with which the following conditions are met:

1. The judges of the county court should agree to appropriate from the county's funds sufficient to pay the county's part of the salary of the farm adviser. This will in no case be less than $1,000.00 per year, and in many cases more.

2. A fund of at least $500.00 per year—more is often required—must be raised in addition to the salary of the adviser for the incidental expenses of running and maintaining the farm bureau.

3. The incidental or farm bureau fund should be raised by obtaining pledges from resident farmers of $1.00 per year for three years. This pledge will eventually be the necessary membership fee to the farm bureau that will be formed. The larger the pledge list of actual farmers, the better.

4. The organization of the farm bureau should not be started until the farm adviser has been in the county long enough to become acquainted with the conditions and the people and then have a part in its organization. The working up of the interest, circulating petitions and pledges, can be handled by a temporary organization or committee.

The committee passing on the applications will consist of the President of the University of Missouri, the director of the experiment station, a representative of the United States Department of Agriculture and the State leader.

In all cases, the availability of State and government funds will determine the number of counties in which this work can be started. The college and United States Government can not at any time obligate themselves in advance of anticipated appropriations.

From the foregoing the reader will gather the briefest outline of the proposed plan of co-operation between government, college and Missouri counties. These few words are not a plea for the cause or an argument in its favor. They are intended to do little other than clearly set forth the plan of work. By far the greatest amount of objection and antagonism to the whole farm adviser idea has been raised by those uninformed or misinformed concerning it; hence the endeavor to explain it carefully.

It should be clearly understood that no farm adviser will assume to give advice or assistance to any farmer not desiring it. However, the farmer who wants first-hand assistance in getting a start of alfalfa on his farm, or wants to know the trouble with his soil and the best treatment for it; the man who wants assistance in ridding his farm of hog cholera, black leg or some crop or orchard pest will apply to the farm adviser; and a personal trip to the one needing individual and specific help will mean the solution of the problem. The farmer who has no apparent troubles but feels that there might be a way to do better, sends his application to the farm adviser for a better system of farming. Such assistance has increased the income for individual farmers in this State from $1,500.00 to $1,800.00 in a single year.

When your child needs the service of a doctor, why not write to Chicago or Kansas City, describing the case, and ask what to do? No, you would rather have the opinion and services of a doctor on the ground, even though you know he is not as well qualified as the high-priced city specialist. The farm adviser is the man on the ground, not to help all Missouri farmers but to help you with your problems.

HANDLING THE HIRED MAN.

(Don G. Magruder, Special Agent, United States Department of Agriculture.)

The material for this discussion was gathered by studying the methods used on farms where hands are handled successfully.

Don. G. Magruder.

No doubt farming is done most satisfactorily where the necessary force is supplied by the family. One farmer who had a very good hand, on being asked whether the boy was hired by the month or by the year and what wages he was paid, replied, "I don't know. You see we are counting on his becoming a member of the family later on and I am intending to give him the farm on which he is working." That is one way of getting satisfactory hands.

Every farm should have at least two men on it. The one-man farm is uneconomical because in much of the work one man is at a disadvantage and because, while it is often advisable for you to be away from the farm, some one should be on the farm at all times.

Investigations made in a township in New York by Cornell University show that the average farm which is large enough for only one man does not pay the farmer hired-hand wages and he can make more by working as a hired hand. If your family does not provide the crew necessary to do the work on your farm, you should hire the crew if you are able to lead them. If you are incapable of doing a hand's work you had better not hire hands unless you are unusually capable in managing men, because, as a rule, a hand to be profitable must be led. If you cannot lead the hands the land should be rented out on the shares, for the reason that usually renters are more capable than hired men, and working for themselves they are more interested in getting results. The methods of a farmer near Blackwater, Mo., illustrate the proper methods for these conditions. He uses a rotation of corn, wheat and clover. As all his time is used in caring for his hogs, cattle, hay and orchard, he rents out his corn and wheat land on the shares. As all the corn is cut, the renter is glad of the opportunity to put in wheat the land he has had in corn. The corn and wheat provide the renter with profitable work practically the year round. By this method this farmer obtains superior workmen, so that receipts from these crops are satisfactory without his own labor.

The main fundamental principle in the hiring of hands is permanency. You should provide the hand with work the year round and as long as he is satisfactory. No capable and industrious man will work for you six months of the year and shift around the remainder of the year. When he is turned off in the fall he gets another job, and in the spring you must look for another hand. Very often that hand is incapable or lazy. At the least, he is unacquainted with your methods. I am acquainted with one large employer of labor who assumes the responsibility of providing a living for his men. If he cannot provide them with work he provides for their needs until he can provide work. By this means he maintains a reliable and efficient crew. You should hire men who want permanent work, such as young men who are going into the farming business and want to learn the business, or married men who want permanent work. Intelligent married negro men are about the most satisfactory, beause they want a regular income, and an intelligent negro man has fewer opportunities than an intelligent white man to go into business for himself. A farmer near Troy, who pays such a man $365 a year and furnishes him a good house, garden and milk for his family, told him last year during the county fair that he might take the week off. The farmer found after the fair that the man had taken off only two afternoons, and when he asked the man why, he explained that he had not been able to arrange the work so he could leave it. To get such men as that they must be employed permanently, and it pays.

In hiring a man the year round you should make provision for rainy day and winter work. For instance, a farmer near Boonville has a concrete mixing board under a shed and on rainy days in summer he makes concrete posts. In winter much profitable employment could be had—such work as cleaning and testing seed, curing meat for the next summer's market, and constructing farm buildings, along with more efficient care of the stock. A farmer near Elsberry laid the concrete floor of his hog house before freezing weather and built the house during January and February. You should try to find profitable work for your men rather than plan how you can cut down the work and turn them off. If work is a little short, instead of turning your men off and doing all the work yourself, keep the men and use some of your time to do a little studying.

Farmers, as a rule, are inefficient as employers, probably because they have not had much practice in employing. Even in the city where employers and employes live apart the successful employer is considerate with his men. In the country where you and your workmen must necessarily live as neighbors you should as nearly as possible treat them as your equal. Efficient men in the country refuse to be patronized. Negro men do not expect to be treated as social equals but they expect fair treatment. Of course your work on the farm must be done, but try to give the man the work he likes best and in which he is most efficient. A dairyman near Neosho hired a man to drive the milk wagon. The man disliking that work, was changed to ordinary farm work, which he does willingly and efficiently. Try to give each man definite work and do not ask extra work of him. A farmer near St. Louis is very much appreciated by his men because he seldom asks extra work of them, while one of his neighbors has great difficulty in keeping men and cannot get good ones because he is always trying to run in extra work on them. Some men find it advisable to have a scale of wages based on the number of hours a man works a day. If you do not do this but pay a standard wage, it will usually pay to give your regular hands a bonus during harvest and threshing. But don't think because you give a man an occasional bonus that this entitles you to ask favors of him. Ask a favor as a favor, and if you give a bonus give it as a reward. A farmer near Windsor pays a man a reasonable wage to start and increases the wage each year as he becomes more experienced and efficient in the work. If a man does not improve satisfactorily in efficiency he is dropped.

You will have very little trouble with the hired hand if you give him regular work, treat him fairly and pay him reasonable wages.

THE USE OF THE FARM DIARY.

(O. R. Johnson, Assistant Professor Farm Management, University of Missouri.)

Farm record work was begun in Missouri in 1910. A daily labor record was kept on several farms, with the object in view of studying cost of operations, etc. This method was a very detailed one. Much time and effort were required to carry it on successfully. It was not a system for general farm use and no effort was made to make it such. As soon as a few men began to hear that the college was helping some farmers to keep their records, numerous requests began coming in for more help with record work. This necessitated the introduction of some briefer, more practical way of aiding farmers so that a larger number might be reached. The office of farm management at Washington had been using a diary to some extent and it was thought possible that enough of these could be procured to fill the present need without any cost to the farmer. It was soon found, however, that the supply at Washington had been exhausted, and if we were to help the farmers with their records we must make some diaries of our own. This was immediately acted upon and a limited number were made which were put out to the farmers at cost. This charge was necessitated from the standpoint that we had to use our own funds to have these diaries printed and could not give the farmer the book unless he paid for it. Now, all men who care to co-operate in the work can buy the diary at actual cost and have it summarized for them at the end of the year's time by the department free of charge. By summarizing the diary, we mean simply the working out from the year's record the costs of carrying on farm operations, profits of those operations, distribution of labor, etc. There are several advantages connected with the department summarizing the diary. The farmers are given a more detailed summary than they would work out for themselves. The summaries are all uniform and worked out with the idea in view of showing the farmers the most important things in connection with their farm work from a farm management standpoint. Also, the department is able to benefit more men than just the man who kept the records, by publishing results which this man received during the year, as shown by the records. These diaries have been in use on thirty Missouri farms during the past year, and for the coming season we have placed twenty more in Missouri. The work is being carried on in a limited way for two good reasons. We demand that a man be serious and start into the record work with the intention of keeping it up when he begins. This means that we cut out lots of people who think for the time being that they would like to have a record of the farm, but when it comes to the actual keeping of that record they decide it is too much work. Again, the supply of diaries is limited and this makes us desirous of putting every one where we will get the largest returns for it.

The farm diary is nothing more than a daily record of what happens on a man's farm. This record is made by the proprietor or superintendent of that farm. Being a daily record, it has a sheet for every day. Before we begin discussing the daily record, there is one important thing which should be considered—this is the farm inventory.

THE FARM INVENTORY.

The taking of a farm inventory for the farmer once a year means the showing to him whether he makes a gain or a loss for the year. Space is provided in the back of the diary for the taking of such an inventory. The left-hand page is devoted to the first inventory taken at the beginning of the year and the right-hand page is used for the second inventory taken at the close of the year. In this way many items may be compared in value by entering the inventory items in the same order each time. The best time to take a farm inventory is usually about March 1st. However, January 1st is almost as convenient. In taking the farm inventory, a man should always be very conservative in his values. The great danger is in placing values so high that it will give him a false idea of his actual conditions. If he uses values that he knows will sell all his property were he to price it for sale at that figure, he will be in much better position than if he uses values which are a great deal higher than the property would bring even under the best conditions. He should use the same method of placing values at the close of the year as at the beginning. There is no general rule which can be laid down for placing values on farm property. A man will simply have to use his own good judgment in deciding what an article is worth. Real estate is usually valued about the same each year, unless some new buildings or fences are put up on the place; then the value is increased to the amount of just the cost of these improvements. All live stock must be valued according to market prices at the time. It is usually well to depreciate farm machinery about 10 per cent each year. Market prices are also observed in placing values on feed and supplies. These are just a few general precautions which should be looked out for.

From this brief discussion of the inventory, attention must now be turned to the keeping of a daily record.

The daily record kept must include at least two kinds of items, namely, "labor" and "receipts and expenses." Feed records in the diary will be considered later.

LABOR RECORDS.

Slightly more than one-half of the page for each day is devoted to a record of the labor put in on a farm. This record should include all work of importance, down to the half hour, performed on the farm for the day. A possible exception is the chore labor. On most farms this part of the work—the regular daily care of live stock on the farm—is so regular in its nature that a monthly statement of all work put in each day is sufficiently accurate. This point will be enlarged on later. The labor record for a day will contain items as shown in the following illustration:

DAY........................... DATE....................... PAGE........

	Hours.	
	Man.	Horse.
I sowed oats and clover in Field C in A. M., using 1½ bushels oats and 10 pounds clover per acre	5	10
Oats cost me 75 cents and clover $23.50 cwt.		
The man plowed corn ground with 12-inch gang in Field B. Plowed 5½ acres	10	40
I went to town in afternoon with produce	4	8
I brought cow with young calf from lower pasture	2	....
Ground works well.		
46 eggs and 20 pounds milk.		
Totals	21	58

Three things are required of a labor item each day in order that it will make the best record. These are:

1st. What was done and where, if field work.

2nd. What machine or tool was used, if any?

3rd. How long did it require man and horse to do it?

The time is recorded in hour's labor. If I work five hours with two horses, I would record it as five-man hours and ten-horse hours.

if a man desires to have any hired hands' records separate, he should connect the man's name with the work that man did each day, then it will be possible to separate this man's work at the end of the year. Any notes such as condition of ground, weather, breeding of stock, etc., can be recorded in this space for personal use. A man should record every day the number of eggs received and the amount of milk used in the home that day. Also supplies from the garden or orchard for use in farm home should be recorded very briefly.

The harvesting of all field crops should be recorded along with the last item of labor concerning that harvest. Also when seed is planted in the ground, the amount of seed and value should be recorded when the item of labor concerning that planting is reported.

If these things are followed out carefully it will give a man a most excellent record.

RECEIPTS AND EXPENSES.

A space is provided on each day's page for reporting the sales and purchases for that day. On most farms such a report will not have to be made out every day, but only two or three days in each week. Because most farmers deal with both cash and credit items, we must have a space for each. Thus, we have a "received" and "paid out" column under both "cash" and "amounts not cash." The following illustration will show how this is handled in the book. The cash can be totaled up each day items are entered, and thus a check is kept on a man's cash account.

DAY.............................. DATE......................... PAGE........

	Amount not cash.		Cash.	
	Received.	Paid out.	Received.	Paid out.
Took 25 doz. eggs to store, at 20c		$5.00		
Received groceries	$3.80			
Credit for balance	1.20			
Sold 6 pounds butter at 20c			$1.20	
Personal				$.10
Bought shoes for son				3.00
Bought nails on account		.25		

Thus, when eggs are taken to town and traded for groceries, the item would be reported as the first item in the illustration. The value of the eggs would be placed in the "paid out" of the "amounts not cash" column and the groceries received in return would be recorded on the "received" side of the "amounts not cash" column. If there was a balance to be paid in cash it would be recorded on the "paid out" side of the cash column on the same line. If a man received a cash balance it would be on the "received" side of the "cash" account—or if he was given credit for it, it would appear on the "received" side of the "amounts not cash" column. This is a common and one of the most difficult items to handle; the rest are fairly easy to take care of.

THE FEED AND CHORE STATEMENTS.

Arrangements were made in this diary to take care of feed and chores at the end of the month, rather than during the month. If a man can find time to make his feed record oftener than once a month it will be much better, but most farmers consider this too much work. The feed statement is simply the farmer's estimate of the amount of feed received by the different classes of stock during the month in round numbers. Care should be taken to give the number of animals in a particular class reported, and the total value of the feed fed these animals. The different kind of feed given that particular class should be recorded separately.

The chore statement is a simple statement of the average daily time spent in doing the chores for one day in the month. It is assumed that this day will be taken as a representative day for the month. In our experience with daily records we find that this will not vary a great deal from the actual time required. Care must also be taken in the case of the chore statement to state the number of animals cared for in a particular class. The chore and feed statements are made out in duplicate in the diary, the duplicates being sent in to the department for correction each month.

A system of duplicate daily reports is used, by means of which we are able to check up on the farmer without the expense of visiting him, and at the same time enable him to make a much better record than he would if we gave him the book and turned him loose to take his notes as he saw best. We simply write to him asking him to make out duplicates, using the blank sheets marked "duplicate" in the back of the diary and send in to us in this way records of certain day's work. We look over these records then, carefully, and are often able to make suggestions to him that will make his record very much more valuable.

This, in a general way, is a method used in carrying on record work by means of the farm diary. We have proved that it is simple enough that any man may keep it if he thinks enough of his record work. So that it is simply a question with him of whether he considers the work important enough to give a little time to it.

CO-OPERATION AMONG FARMERS.

(N. P. Jacobsen, Secretary Ozark Dairy Association, Seymour, Mo.)

The management of farms is a great problem, for it has many sides and many different problems come up every day. The man who succeeds in these days is the man who thinks and studies his business.

N. P. Jacobsen.

I do not agree with the person who says that a man should have a large farm to succeed on account of being able to do the work to so much better advantage. I believe the small farm can be made to succeed as well as the large one, if the small farmer will adopt the proper method. In managing a farm, it is not enough to know what crops to grow or how to grow them or the rotation of crops to be used, but it is also essential to know the best way to market the products and to purchase necessary supplies. It is not enough for a farmer to recognize the value of growing clover in the rotation, but he should also know something of the value of manure. I want especially to call your attention to the saving of manure, for there is a tremendous amount of fertility going to waste each year because the farmer does not save the manure. But he should know the proper way to market his product.

Down our way it is not profitable to raise grain to sell, and we cannot produce corn cheaply enough to go into the hog business very extensively. Cattle raising and especially the dairy business is what has proved the most profitable. On small farms we have found that we cannot, as individuals, market our cream successfully, as but few cows are kept by each farmer. When we first started in the dairy business some seven or eight years ago, we took our cream to town and sold it to a merchant, who paid us his own price. At first we got a good price and people started in the dairy business pretty fast, as our county in the Ozarks is well adapted to dairying. However, the price soon dropped and went as low as seven cents below Elgin. We then organized a co-operative cream-selling association. We felt that we should have something to say as to what price we should receive for our products.

The Ozark Dairy Association was organized for the purpose of selling cream, and for four years we successfully sold our cream under contract and our membership grew from a few to 723. We met with strong opposition in the beginning. Merchants everywhere would discourage the farmers. However, we raised the price of cream and increased our membership in spite of all opposition. We sold our cream as an organization and received an average of 1½ cents below Elgin prices. But last year when we met to sell our cream we could find no one to buy it, so had to build a creamery. This creamery is now completed, has been in operation a little over two months and is now doing very well. We made a success as a cream-selling organization. How successful we will be operating a creamery, I will tell you next year.

GREEN HILLS CREAMERY

Result of Successful Co-operation in the Ozarks.

Since our organization the farmers have gained confidence in the dairy business and it has increased very rapidly. This has increased the demand for feed, for we have found that we can produce roughage and buy mill feed cheaper than we can raise all the feed. Soon men took advantage of this and feed stores sprung up everywhere, and we had to pay a big profit to the dealer, sometimes as high as 30 cents a sack. This led to the organization of a supply company at Diggins, Mo. We have now been in operation two and one-half years and have done well. We handle nearly everything that a farmer needs and sell at a lower price than the same can be had from the regular merchants.

In co-operating, I believe everyone should join. It is not right for the farmers to organize against the business men of the town. Neither is it right for the business men of the town to organize against the farmer, but we should work together for the upbuilding of our State and our community. By our organization we have been well paid for our trouble in the prices received for our cream and the lower prices paid for feed and other supplies. Co-operation among the farmers can be carried on all along the line and it means better farms, better farmers, better roads, schools and churches. It also means better towns, for anything which will help the farmer will help the whole State. This year we had thousands of bushels of apples rotting under the trees. No organization, no spraying nor grading, and hence no market. The time has come when farmers of Missouri will have to organize or get left.

THE MISSOURI FARMERS' EXCHANGE.

(D. H. Doane, Professor of Farm Management, University of Missouri.)

Anyone in a position to observe or hear the trend of feeling expressed by producers and consumers during the past few years knows that there is an everincreasing dissatisfaction among both groups. This feeling has often found expression in the formation of clubs, societies and various organizations launched for the purpose of obtaining better prices for the products of the farm or to lower prices to the ultimate consumer. The present system of handling farm products cannot be benefited very much if the same number of handlers of these products remain in the business. It relieves the situation but little, if any, to have some organization take over the business of the retailer or some producer's club handle the work of the present wholesaler. These well-established businesses are operating on a basis worked out through years of experience and it is hardly probable that a new united organization with new inexperienced officers can compete with them. Realizing these facts, the Missouri Farmers' Exchange organized on an entirely different basis. It has for a fundamental principle or keynote the elimination of all "middlemen" or "direct from producer to consumer." With this as a basis the exchange was organized. At a mass meeting of farmers at Columbia during Farmers' Week this year the plans were launched. Resolutions were adopted inviting all state farmers' organizations to participate in a general organization, having for its object the direct exchange of farm products between producer and consumer. A president and vice-president, both farmers, were elected with power to complete the details sufficient to put the exchange on its feet. These officers hired a secretary on a commission basis, with the idea of thus stimulating his best efforts to push the work of the exchange. L. M. Drumm was selected. He is a graduate of the Missouri College of Agriculture, and although a young man, has had quite a wide field of experience in the business world.

The active work began February first and up to date one hundred members have been enrolled.

The organization has been concerned in the exchange of $2,000 worth of farm products. The business is handled about as follows: Anything a member (a farmer) has for sale that a member might want will be handled. For example, a member living in Northeast Missouri has timothy seed for sale. He lists the amount, describing it carefully and stating the price F. O. B., his shipping point. The secretary lists this "for sale" with the understanding that if he sends the seller a buyer, the former, the seller, will pay the exchange a small commission.

Now, some one in Central Missouri writes the secretary for timothy seed. His duty is simply to refer the one to the other. After the sale is made the seller sends the secretary the proper commission. Nothing could be more simple, more direct, more efficient and more satisfactory. The seller is directly responsible to the buyer; they make their own terms and conditions; all middlemen are cut out and but one transportation charge is made. The fee of the secretary is so small that it would not make a small fraction of the charges made by one middleman who has city rents, warehouse charges and a corps of workers to pay, to say nothing of his living and profits.

The success of this movement will depend largely upon the honest dealing between the farmers. If Southeast Missouri cowpea seed growers will honestly grade, fan and label their cowpeas, they can add from 25 per cent to 50 per cent to the price they have been receiving and save the consumer in Central and Northern Missouri as much. This not only applies to seeds but all kinds of crops and stock as well as farms, and also a medium for getting help for farmers and finding employment for those seeking it—in short, "anything the farmer wants that the farmer has."

There is no question but that the plan is workable, for it is working. The larger the membership the less the cost of operation, for with increased membership will come increased "wants" and "for sales," which means more business, and hence a smaller margin. It seems that here is a movement that every farmer in Missouri can well afford to back. It only costs the $1.00 membership fee unless some business is done, and then only the seller who pays to the secretary from his profits a very small fee for finding the buyer.

WHY I INTEND TO REMAIN A FARMER.

(J. Robert Hall, Lamonte, Mo.)

This subject comes very near me and I think should to every young man who intends leading an upright life with any degree of success whatever. Farm life means the best of environmental conditions and helps wonderfully along this line.

J. Robert Hall.

Agriculture affords an opening for a person at most any stage of life; therefore, it is considered a very substantial and reliable occupation. It is becoming more so as the demands of people engaged in other occupations become greater.

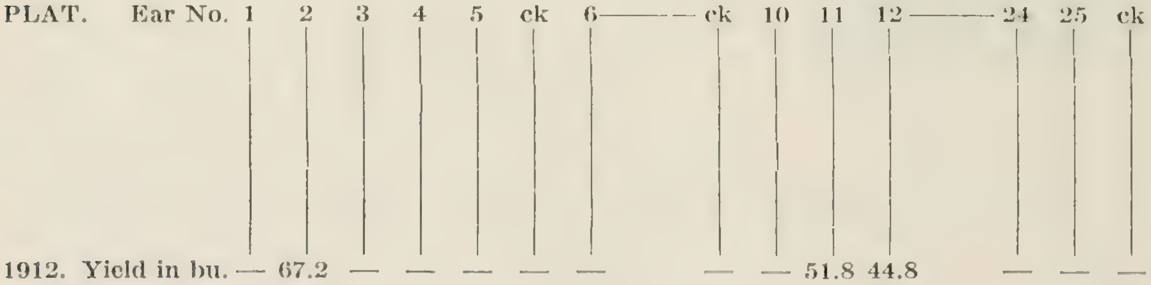
The study of farming is solely a study of nature, which greatly encourages every one who engages in its study. The encouragement which it has given me is the main reason, as you will see, that has kept me on the farm, and I think its grasp is enough to hold me there indefinitely. Its study and practice is carried on around the home (a place at which it is good for us all to be), because it affords us great pleasure and independence.

For me to get at my subject as it should be gotten at, it will be necessary for me to relate some of my past experience and its effect. Every boy who has had like experience, you may feel sure, will remain on the farm.

I attended the ordinary rural school and saw but little of the possibilities in the agricultural world till I went to Columbia in 1909 to attend the short course in agriculture. I had started to high school but the management was poor, so my father made arrangements for me to go to Columbia. "Farmers' Week" began the 4th of January. I arrived there the second, and received quite a bit of inspiration from hearing those who had been there before me and put some theories into practice and had results worth while. I gathered a great many new ideas before the course ended and went home expecting to put them into practice. I thought we should know which variety of oats and wheat yielded highest on our particular soil, so I decided we would make the variety test experiment on them.

In March I wrote Professor Miller, as he had taught some of my classes while in Columbia, asking him to send me eight ears of Reid's Yellow Dent. It had proved to be the highest yielder in our test plat of varieties and we wanted a start of the seed which was good. I received the eight ears and planted them to themselves, each in a separate row. While they grew I noticed a marked difference in their growth and size of stalk. At harvest time the product from each row was weighed and ear, or row, No. 4 produced 27 bushels per acre, and ear No. 7 produced 38 bushels.

From the eight ears I sold 10 bushels of seed and saved enough to plant our entire crop. After getting such results as this, I thought it wise to make the same test again. The next season we used 25 ears in the way shown in the plat except we used the outstanding high yielders to plant the following season in an isolated plat.



From a map of the plat you will see that a row 40 hills long was laid off for each ear, every sixth row being a check row used to determine the difference in the soil's fertility so if there were extra rich spots no ear would receive this as credit on its yield. Only a small part was planted from each ear. The remaining part of each ear was reserved so that those that yielded very high might be planted in a plat isolated from any other corn, so they would not be mixed with any other low yielders. This season, 1910, the minimum yielder was No. 12, which produced 35.5 bushels. The maximum was No. 1, which produced 58.1 bushels per acre. I took some of my best to the State Fair and won first there in the "Pettis county bankers' contest," and also some State premiums. My oldest brother had quite a hand in the work of breeding this corn, so a county and State premium went to him also. Up to this time we had made as premiums and sold seed amounting to $360 from the original eight ears received the year before.

The next season we tested twenty-five in the same manner, and had ears that produced twice as much as others.

This season, 1912, we had a more interesting test than ever, as the season was good and each ear could reproduce without being hindered by adverse conditions, as was last season's crop. (I have some of the ears tested this season here and would like to have you guess which ear is No. 2. You will see it yielded highest by seeing the yields on the plat shown on the diagram. You may see that opinions differ and ears do also.) No one can tell how much an ear will yield in every case by its outward appearance, but I have found that there are rules that one may go by in the selection of high producers that hold good for our Reid's and will increase the yield considerable. I have found that the longer ears, (not unreasonably long), have produced 3.28 bushels more per acre than the shorter ears. The tapering ears yielded 1.5 bushels less than the more cylindrical ears. This we have found by two methods: First, by examining the recorded description of the tapering ears and the cylindrical ones and comparing their respective yields. Second, we planted the butts at one end of the breeding plat and tips at the other which made a difference of 2.74 bushels per acre in favor of the butts, the difference being very much greater in the rows where the mother ears were most tapering, caused by shallow weak kernels at the tip. The moderately smooth ears outyielded the moderately rough ones by 2.74 bushels per acre. Ears weighing an average of 11 ounces yielded 5.2 bushels less than those weighing 14.2 ounces.

Now we see that it is best to plant ears that are longer, smoother (not open and flinty), more cylindrical, and heavier ones.

There are many other things that will greatly increase the yield, such as detasseling to prevent inbreeding and cause cross breeding, stalk selection of ears, careful storage, ear testing for germination, and likely others that may be found later. This is interesting.

Another incident that has helped in drawing me nearer the farm is one that happened here in December, 1909. I came by a doorway and as I passed I heard a very interesting conversation between a group of farmers and a professor, so I walked in and found Mr. Doane in his office explaining his plan of co-operation in farm management. When it came time to join I wrote my name and asked if my father's name would be acceptable, as the fee was small at the beginning. When I reached home I told my father of the plan, so he wrote Mr. Doane asking him to come to our place and make it a demonstration farm, if possible. Mr. Doane never got there until July and then he changed our plan considerably and before long made us demonstrators. He did not visit us very often, but when he did we were all certainly glad to see him, for he always had lots of encouragement and new plans to help along in a financial way.

Mr. Doane's plan means more intensive methods and more intensive labor, for there isn't a time that there isn't as much as we can do, for we try to follow his advice as close as possible. But I have found one objection to it, and to get the returns we do at present I can't supply a substitute for it. Now, the objection is that it is entirely too easy for my father to find something for me to do. Guess I had better not be too hard on my father this time, though, for he is here. He is not so bad as some I suppose, either, for I know some short course men who have come here and gone home, expecting to carry out some of their plans, that were good, but the old way was good enough for father, and they didn't, so it wasn't long till they lost most all interest. In other words, they must get results. The results I have gotten through Mr. Doane and father have certainly given me the required inspiration and aspiration to go higher and higher in the same direction. The opportunities and encouragement we boys get at home are great indeed. Herbert, the youngest, gets an old hen and chickens, so he cares for the poultry and he's the poultryman. Ralph gets a pig, for instance, so he is the hog man. Ray gets a sheep, so he becomes the shepherd while out of school, and I get one-half the seed corn saved, so I am the corn man. Our father gets all the milk and butter he can handle, so he is the dairyman. We all have a part to do or a class of stock to care for and that is our task that must be done, for we keep the farm records and these records are helpful in encouraging a boy to see that there is something worth while in farm work. We all like to see just where our money comes from (the records show that) and also where it goes. If one class of live stock doesn't do as well as it should the records show this, and the feeder knows it, so feels the responsibility and thus investigates to find the mistake, while if it were as it is in many cases where all do all, none would feel the responsibility as they should and the father would have to bear the blunt of the whole. This plan where all assume some responsibility, and often have a small investment, causes great interest. For instance, as my father allows me one-half the seed corn, I experiment and specialize on corn. Along about State Fair week, though, I have an enormous amount of help, for all but the youngest go on Saturday or get an excuse from school and start for a day's corn husking to get the show corn. Each of us tries to get the best ear and then the best ten. At the fair this fall we received $78 in premiums. Here is not the only place they show interest, though, for all like to see the corn grow, also the pigs and sheep, as well.

Aside from the breeding of corn there is a wide range of work that may be done in most all other crops. Oats, for example, should be bred by plant selection and the plant-to-row test plat used. Soy beans must be bred the same way before the maximum yields are reached. Wheat breeding is carried on in the same manner with excellent results.

These things I have mentioned are of interest to me because I am in them every day, and they become a part of me, and they will be of interest to any boy who is closely connected with them. To keep a boy on the farm he must first have interest in things, and of all things I have mentioned, the one that keeps me on the farm is the interesting side of it. It has given me the required inspiration and, my friends, right in the Agricultural College here is the place to get the foundation for it all.

PRESERVATION OF FENCE POSTS.

(Ernest C. Pegg, Department of Forestry, University of Missouri.)

The question of the preservative treatment of farm timbers, and especially of fence posts, should be of interest to all farmers. It is of particular interest to the progressive farmer. Common sense and experience have taught him to select from his wood lot the kinds of trees whose wood is durable in contact with the soil, of moderate strength and capable of holding staples well. Such woods as have been used are as follows:

Black locust, Kentucky coffee tree, catalpa, Osage orange, mulberry, black walnut and chestnut.

Other good species have been used, but in many sections of the country they are becoming too scarce or too expensive to be used for this purpose. Substitutes must now take their place. These may be in the form of iron or reinforced concrete, materials which make posts too expensive, or else woods which decay more rapidly than the ones formerly used. Such trees are as follows:

Maple, ash, elm, hickory, red oaks, basswood, sycamore, birch, cottonwood and willow.

There remain in the wood lots today many such species, which, if given a proper preservative treatment, can be made to last twenty years or more where they would otherwise decay in less than five years.

In order to clearly understand the principles involved in preservative treatment, it is first necessary to know what causes decay in wood. Decay in wood is caused chiefly by a low order of plant life called "fungi." The "seeds" of these plants are called spores. Spores are so small that they cannot be seen without the aid of a microscope. When seen in bulk they appear as a fine dust, and, like dust, they are carried by the wind and strike all parts of surrounding objects. Like all plants, in order to exist, a fungus must have a supply of food, water, air and a certain amount of heat. If the requisites are found in the lodging places of these spores—the fence post for example—they begin to grow. They send out thin, film-like threads, which, by repeated branching, penetrate all parts of the wood structure. Wood is made up of small cells having thin cellulose walls. These thin walls are thickened by lignin. Communication between these cells is by means of pits. It is through these pits that the fungus sends its "roots"—the film-like threads. A substance is secreted by these "roots" which absorbs the food materials for the fungus. Some fungi live on the sugars or starchy matter stored up in the wood, others, the more formidable ones and the real wood destroyers, dissolve the cell walls and lignin, thereby changing the hard wood into an incoherent mass of powder or dust.

All woods which have a moisture content of over 10 per cent are subject to decay. Fungi when cooled to near the freezing point ceases activity but do not die; when heated to about 150° Fahrenheit they are killed and so the wood is disinfected for the time being. When wood is submerged in water or deeply buried the air is excluded so there can be no fungus growth. If these decay-producing organisms are deprived of one or more of the above conditions, their growth is checked. In the case of fence posts it is impossible to govern the temperature and air, so all attempts toward prolonging the life of posts must be along the lines of poisoning the food supply or reducing the moisture content. These two things are accomplished by the proper use of certain preservatives.

There are several simple methods of lengthening the life of posts which are worth mentioning. First and simplest, perhaps, is seasoning. Wood, when cut, contains a considerable amount of water. This is especially true of the sapwood. It also contains more food material and so is more susceptible to the attacks of fungi than is heartwood. No sapwood in its natural state is durable—even the sapwood of the durable woods, like cedar and catalpa, decay rapidly. By piling the posts so as to allow free access of air all round them, the moisture content can be reduced to 15 per cent or 18 per cent, depending, of course, on the climate. It it important to have all the bark removed so that the process of seasoning may proceed more rapidly.

Paints and other materials have been largely used in the hope of preserving timbers. The practice is to be commended provided the timbers are thoroughly seasoned. Otherwise, the coating will make a moist chamber, a condition which favors the growth of fungi rather than retards it.

Another method is that of piling stones or gravel around the base of the posts. This checks the growth of weeds and allows a free circulation of air. It is doubtful whether the air circulates freely enough to retard the growth of fungi by keeping the moisture content below 15 per cent or thereabouts.

Charring assists merely as an insulator, separating the wood from the ground. Fungi cannot live in charcoal, there is no food for them, and so the wood will not decay. Generally, however, the process develops large cracks or checks in the wood so that the interior is exposed. Fungi gain entrance through these checks and the wood decays rapidly.

Dipping of posts in a thin solution of cement or similar material has much the same effect as a coat of paint. Then, too, as the wood will shrink or swell, cracks are made in the hard coat so that fungi may enter.

Oil paints are valuable for protecting wood against moisture. Coal tar and pitch, especially if mixed with turpentine and applied hot, heat causing them to penetrate more deeply, make very good coatings. One barrel of coal tar (50 gallons) costs $3 to $4 and is sufficient to paint about 300 posts. Both tars and paints have the disadvantage in that they act as mere covers. If the wood is not thoroughly seasoned before their application, they do more harm than good. As the wood seasons, checks are opened up in any case, so that it is a difficult matter to fill them by using any of the "brush treatments."

To overcome this difficulty "dipping" is practiced. This method gives a more thorough coating and saves in labor. It requires a larger quantity of preservative and forbids the use of the more expensive ones. In spite of this, petroleum tar, coal tars and creosote may be advantageously used.

There is one preserving fluid, a still higher distillate of coal tar than creosote, which deserves particular mention when used for painting or dipping. This is avenarius carbolineum. It is the invention of Richard Avenarius, a German chemist. Its composition is known only to him. It is a finished, insoluble, chemical compound, a thin, oily substance of heavy specific gravity, and an exceptionally good disinfectant and fungicide. It is free from acids or other substances injurious to wood. Winter and summer it remains a liquid without evaporating or deteriorating. It can be used on partly seasoned wood if applied hot. Its use is simple, practical and economical. It requires only a paint brush for its application, and subsequent coats insure deeper penetration, thus intensifying its effect. Its heavy, oily, chemical ingredients secure self-impregnation, gradually permeating and curing the wood just "like smoke cures a ham." It makes the wood tough and increases the holding power of staples. It does not close the pores in the wood but allows as free a circulation of air as does untreated wood. Water is repelled by its oily character. White oak fence posts treated with carbolineum have lasted more than 20 years and cottonwood, which ordinarily lasts but two or three years when in contact with the soil, has been known to last more than 10 years. Thus it can be said that carbolineum more than triples the life of fence posts. The cost is slight. We have on file in the department of forestry copies of letters stating the cost to be from one to one and a half cents per post.

The following is a price list for carbolineum, delivered freight prepaid for five gallons and upwards, as quoted by the Carbolineum Wood Preserving Co., Milwaukee, Wis., January, 1913:

75 cents per gallon in barrels of 52 gallons.
80 cents per gallon in barrels of 34 gallons.
80 cents per gallon in barrels of 25 gallons.
85 cents per gallon in kegs of 15 gallons.
90 cents per gallon in kegs of 10 gallons.
$1.00 per gallon in kegs of 5 gallons.
Sample gallon cans $1.25 f. o. b. Milwaukee.

There is one other method, which, in spite of its first high cost, is perhaps the best and most economical in the long run. This is the so-called "open tank" process, using creosote as the preservative. Creosote is a distillate heavier than water and is obtained by the distillation of tar or a tar-like substance. There are several kinds of creosote, depending on the kind of tar distilled. Among them are:

1. Coal-tar creosote. This is derived from coal tar which is produced by the destructive distillation of bituminous coal at temperatures of 1,500° to 3,000° Fahrenheit. It is a by-product in the manufacture of coke and gas.

2. Oil-tar creosote is derived from oil tar. Oil tar may be obtained by the destructive distillation of petroleum in a gas retort where oil gas is the main product and tar the by-product. It may also be obtained from the manufacture of water gas.

3. Wood-tar creosote comes from the distillation of wood tar. Wood is destructively distilled leaving a residue of charcoal. Gases, vapor and a liquid distillate are carried over. From this liquid distillate may be obtained crude tar.

4. Mixed creosotes are produced by mixing some other substance with creosote or by mixing tars of different sources.

The general process of obtaining creosote from the tars is practically the same. The tar is distilled in a metal retort, the vapors collected and condensed. Those distillates which are heavier than water form the creosote. The temperatures at which they are obtained vary greatly, but are usually between 200° and 360° centigrade, depending upon the character of the residue desired. The chief differences in creosotes is in the character of the hydrocarbons, whether they belong to the paraffin or aromatic series.

Posts to be treated by the "open-tank" process are immersed to a depth of about 30 inches in creosote which is held in some form of a tank with an arrangement for heating. Heat expands the air and water in the posts. As the preservative cools there is a contraction of the air and water left in the wood. A partial vacuum is thus formed and atmospheric pressure forces the liquid into the cellular and intercellular spaces. A small portion is also absorbed by the cell walls. The hot bath merely prepares the wood for absorbing the creosote and the actual impregnation follows as the preservative cools. The ease and effectiveness with which the timber is impregnated by this process depends on the kind of wood and its degree of dryness. A porous wood which has been seasoned not less than six weeks is most easily treated.

If a single tank is used the cooling bath may be given by allowing the temperature to fall after it has been maintained for an hour or two at about 220° Fahrenheit. It is better to employ two tanks, one for giving the hot bath and the other for the cold one. The tanks for the hot bath may be two barrels connected by a short pipe, the heat being applied to the pipe, the heating of creosote being brought about by convection currents. Or it may be a heavy iron tank heated by a direct fire.

Creosote may be purchased from the Barret Manufacturing Company of St. Louis. Their quotations in January, 1913, were as follows, f. o. b., St. Louis:

10 gallon cans, 20 cents per gallon.
Barrels, $8.00 per barrel.
5 barrel lots, $7.50 per barrel.

Most species will absorb too much creosote if very long treatment is given. To make the treatments economical, the absorption must be limited to 0.4 gallons per post if only the butt is treated and 0.6 gallons if the top is impregnated also. The best treatment is that which will give, with a reasonable absorption, the deepest possible penetration of the oil into the wood in the shortest time.

The following statements taken from forest service investigations show the saving in money due to treatment with creosote:

An untreated loblolly pine post costing 8 cents or 14 cents when set in the ground, will average a life of two years. At 5 per cent compound interest the annual charge against this post is 7.53 cents. The same post if given a treatment costing 10 cents, and this is rather high, will cost, when set, 24 cents. Its life will be 18 years. At 5 per cent compound interest the annual charge will be but 2.04 cents. This shows a saving of 5.49 cents per year on each post. With 200 posts per mile, there is a saving of about $11 on each mile of fence per year.

Missouri Branch of the American Poultry Association.

President—E. C. Branch, Lees Summit, Mo.
Vice-President—V. O. Hobbs, Trenton, Mo.
Secretary-Treasurer—W. S. Robinson, Fayette, Mo.

MINUTES OF MEETING.

Following is the report of the third annual meeting of the Missouri Branch of the American Poultry Association held at Columbia, Missouri, in connection with the Boone County Poultry Association, January 16-17, 1913:

W. S. ROBINSON, Secretary.

Pursuant to announcements in the various state papers and poultry journals, the third annual meeting of the Missouri State Branch was called to order in the University auditorium on the University campus at 3:00 p. m., January 16th, with Vice-President V. O. Hobbs in the chair. The following officers were present: V. O. Hobbs, vice-president; W. S. Robinson, secretary-treasurer, and J. M. Stone, member of the executive committee.

The following members answered to roll call: T. E. Quisenberry, H. L. Kempster, J. F. Bruns, Miss Elizabeth Hodge, Mrs. R. Lee Alford, W. D. Hart, Mrs. D. E. McArthur, J. C. Cruthers, Dan Oberhelman, Missouri State Poultry Association, Boone County

Poultry Association, Central Missouri Poultry Association, Concordia Poultry Association, and perhaps others who were not present at time of roll call.

Minutes of last annual meeting read and approved as read. The very inclement weather no doubt kept many from attending the meeting, although in the city. Next order of business was appointment of committees, and J. F. Bruns, Miss Elizabeth Hodge and Mrs. D. E. McArthur were appointed as a board of review. Melvin Gregg, H. L. Kempster and W. D. Hart were appointed as an auditing committee, both to report at the meeting next morning at 9:00 o'clock. There being no further business before the meeting it was duly moved and seconded that we adjourn to meet at 9:00 a. m. January 17th.

On January 17th the association met in agricultural hall at 9:00 a. m. with V. O. Hobbs in the chair. The report of committees was first order of business, and the board of reviews committee was first to report. They reported the following members elected: E. C. Branch, president; V. O. Hobbs, vice-president; W. S. Robinson, secretary-treasurer; J. M. Stone, Henry Steinmesch and W. C. Rolley, members of the executive committee. The committee was instructed to destroy the ballots and were discharged.

Next committee to report was the auditing committee and they reported the secretary-treasurers' books to be correct in every detail. It was duly moved, seconded and carried to accept the report as given. Next order of business was the inauguration of officers. V. O. Hobbs, vice-president; W. S. Robinson, J. M. Stone, members of executive committee, were the ones present and they were duly sworn in.

Vice-President V. O. Hobbs made a good speech on the growth of the branch, which was followed by a short talk by Secretary-Treasurer W. S. Robinson on the importance of encouraging the joining of the A. P. A. by all breeders of poultry, and that we, as members, should use our influence to assist the officers to make Missouri come to the top of the list of members.

We are the greatest State in the United States in the production of poultry, and why not back up one of the most important branches in the world by soliciting the good and honest breeders of the State to join us and help to push the work. Make yourself a committee of one to get at least one new member this season, and if so we can go to the top of the list.

Mrs. R. Lee Alford, T. E. Quisenberry and J. M. Stone made good talks on the A. P. A. and the good it was accomplishing in our

State. We regret very much that we can not give the speeches in full.

Our large membership has grown from the members standing side by side with the officers, and if we accomplish what we hope to in the coming years, it is still going to take a long and hard pull together.

Professor H. L. Kempster made some very important announcements, after which it was moved, seconded and carried that we adjourn sine die.

POULTRY CONDITIONS IN MISSOURI.

(H. L. Kempster, Assistant Professor Poultry Husbandry, University of Missouri.)

H. L. Kempster.

During the last few years poultry conditions in the United States have undergone a remarkable change. Probably at no time in the history of the country have we experienced as great interest in poultry raising, either on the general farm or on a commercial scale. Occasionally you hear people saying that the markets will be flooded with good poultry products and yet each year has seen a gradual increase in prices. An investigation of the meat supply of the country quickly explains the reason for this increase and also the necessity for greater interest in poultry culture. The census for 1910 shows the following interesting figures regarding our sources of meat supply:

Cattle have decreased in number 8.7 per cent; swine, 7.4 per cent; sheep, 14.7 per cent, while poultry has increased 17 per cent.

From an economic standpoint it is essential that poultry as a source of meat supply should increase to make up for the decrease in the other sources.

While poultry has increased in number 17 per cent, turkeys have decreased in number 44 per cent; ducks 39 per cent, and geese 21 per cent.

Thus, while our total production of poultry has increased practically one-fifth, we are raising only three-fifths as many turkeys and practically three-fifths as many geese. The total number of fowls has increased 20 per cent, while their value has increased from $136,800,000 in 1899 to $202,500,000 in 1900. The increase in value thus has been in greater percentage than the numerical increase. It is interesting to note, also, that the increase in the production of eggs during the last ten years has been 23 per cent, showing that the production per hen, as well as the number of hens, has increased.

In order to get a satisfactory idea of poultry conditions in Missouri as compared with the rest of the country, it is necessary to glance over some statistics relative to poultry conditions in the United States. The government census indicates that:

The average number of fowls per farm is 86.

The average value of the bird is 52 cents.

The average number of eggs produced on each farm is 282 dozen.

The average price per dozen is 19 cents.

The average income per farm from eggs is $53.58.

Adding to that the income from poultry on the farm:

The average income from the general farm in the United States is $98.50.

In the west, north and central states, including Minnesota, Iowa and Missouri, North Dakota, South Dakota, Nebraska and Kansas:

The average number of fowls per farm is 122.

The average value per chicken is 42 cents.

The average number of eggs produced is 440 dozen.

The average price per dozen is 17 cents.

The average income from each farm from eggs alone is $74.80.

Adding to this the income from the poultry as meat:

The average income from the farm in the west, north and central states is $126.40.

The average income from the general farm in the United States is practically $27.00 less.

In Missouri we find that:

The average income per farm is $150.00.

The average income from the general farm in the United States $51.50 less than the average income from the general farm in Missouri.

A glance at these figures indicates that Missouri must have unusual advantages for poultry culture. The writer has been unable to ascertain the actual number of birds kept on the Missouri farm, but information given by students who have been in the poultry department indicates there is an average of 180 chickens per farm in this State.

No attention has been paid by anyone in Missouri to organization for building up the poultry business. It has reached its present status simply because of the natural conditions which favor poultry culture and because those who undertook the raising of chickens found it profitable. Poultry thrives best in well-drained sections where there is a long growing season and abundance of clean water, insects which furnish animal food and a good supply of gravel and grit.

From the standpoint of climate, Missouri is very favorably adapted. It is far enough south to escape the long bleak winters of the north and yet far enough north to miss the protracted hot summers of the south. Periods of extremely cold or hot temperature rarely occur, the thermometer scarcely ever dropping lower than five or ten degrees below zero. In summer the temperature occasionally reaches ninety or ninety-five degeres and some days rises to one hundred, but very seldom, and hot winds are unknown. Under these conditions chickens thrive and are comparatively easy to raise. They produce liberally and are so easy to manage that the person who starts raising poultry gradually increases the flocks and acquires a habit of marketing poultry and eggs regularly.

One result has been that a large majority of the farmers' wives in Missouri have been getting cash incomes from their poultry varying from $200 to $3,000 per year. And this has been done with poultry, not as a specialized business, but as a side line on the farm—an indication of how well the country is adapted to making money from hens.

The majority of the poultry in Missouri is raised on general farms. The very few people who have gone into poultry raising as a business are securing especially good returns.

Marketing conditions in Missouri are varied. It is a common thing to see the farmer with a dozen chickens under the buggy seat come into a small town and deliver these alive to a city customer who has a small slatted coop built up from the ground in which he confines them until ready to consume them. During this time the birds are especially fattened and afford the consumer a luscious product, the freshness of which it is unnecessary for him to question. In many of the markets, unless specified, the housewife when ordering chickens will get live ones instead of dressed carcasses. In some places, however, we find a highly specialized market demanding only the finished products in their most attractive form. Too often the markets in Missouri display products which are poorly prepared and hence do not find ready sale.

What has been said about marketing so far applies particularly to the product which is consumed within the State. Missouri is one of the few states which produce a greater amount of poultry than is consumed within their own boundaries. That which is shipped out of the State generally leaves in a very attractive form. Because of the abundance of poultry, large poultry fattening establishments have been established in practically every city which has more than one railroad and in many places which are conveniently situated for collecting poultry from the surrounding territory. In these places the poultry is especially fattened, dry picked, precooled, carefully graded, boxed and put in refrigerator cars for shipment to the eastern markets. Where special fattening is done it is possible to place on the market birds of excellent quality, and we find that most of the poultry shipped out of the State finds ready sale and also that the proportion of live poultry which is shipped out in carload lots is gradually decreasing.

The condition relative to eggs is open to vast improvement. It is estimated in conservative figures that fifteen million dozen eggs a year produced in Missouri are unfit for food because of carelessness in the manner in which they are handled. This represents a loss of about three million dollars, and this loss is borne largely by the producer and the consumer—the producer in Missouri and the consumer in the eastern markets, where a large percentage of the Missouri eggs find their way.

This loss is largely due to the system of buying which are in vogue in the Middle West. Eggs are produced on the farms and marketed, perhaps, once a week through the grocery stores, are then shipped to the egg depot and from there go to the commission men in the large cities, who dispose of them to jobbers and they to the retailers. It is seen that the egg goes on a long journey from the producer to the consumer. A large portion of this loss is due to the carelessness of the farmers or to improper methods of handling the eggs on their way to cold storage. The present method of handling in a large majority of cases does not encourage the producer in the production of eggs of quality, especially when purchased by the country store. Often the storekeeper, in order to obtain the trade of the farmer, pays a higher price for the eggs than he sells them for, many times losing money on the venture. He does this in the hope that he can encourage the farmer to "take it out in trade" and by selling his goods at a higher price, realize a profit on the deal. This method not only places a premium upon bad eggs but works an injustice on the customers of the store who are compelled, because of this practice, to pay a higher price for their goods than they would if the storekeeper did not mark them up in order to come out even on his egg operations. Eggs are bought in most cases just as they come from the farm—good, bad and indifferent—and the result is that the eggs when collected into the depots are usually an uneven lot in size, color and condition. As long as the present system of buying is used, there can be little hope for the elimination of the present enormous losses. Until some scheme is devised which will cause the producer of good eggs to realize a greater benefit and the producer of bad eggs to stand the loss because of his carelessness, the egg industry will not approach its possibilities. So far the writer has been speaking relative to the general conditions in the State. In some sections, however, there has been adopted a system known as the "loss-off system" of buying, a practice which results in the eggs being candled as they are brought in, the good ones accepted at a higher price and the bad ones turned back to the person who produced them. It is interesting to note that in those sections the quality of eggs has much improved. Where the system is fully understood, there exists a greater harmony between the producer and the egg buyer. Many firms candle eggs as they come in but make the mistake of not explaining to the producer that he is getting a higher price than he would were they not candled. Where the buying is done by an egg dealer and not through the grocery store, this practice seems to be working satisfactorily. However, where the egg dealer and grocer are both working in the same town, the grocer generally pays more for the eggs than the egg dealer can afford to pay, making his profit by the goods which he sells. It is thus seen how difficult it is to establish a quality basis for buying eggs under those conditions. This is the status of egg marketing in Missouri.

The success of those who have produced eggs is largely due to the marketing facilities. Missouri has unusual accessibility to markets. There are twenty-three railroads running into the Union Station at St. Louis, affording the Missouri poultryman a market form Chicago to New Orleans and east to the Atlantic. Ten railroads enter Kansas City and cover the territory south to Galveston and west to the Pacific.

As to what is being done in this line, a few illustrations will suffice. A Windsor, Mo., man has a farm of 400 acres. His wife and daughter spend their spare time raising poultry. The income from their farm poultry flock for one year was $713.00. Another farmer of the same town is keeping 1,600 brown leghorn hens. They have kept an accurate account for over twenty years and during this time their poultry receipts have run from $2,500 to $3,000 a year. A Pleasant Hill man was offered fifty cents a dozen for all fresh eggs from November 1st to April 1st, and was also offered a high price by a Chicago firm for all the fresh eggs he could produce and those he could get from his neighbors. He has incubator capacity of five thousand eggs. The Yesterlaid farm, Pacific, Mo., keeps three thousand chickens and on November 25, 1911, was getting fifty-six cents a dozen at its home station. shipping them to New York City. In many places where a little attention is paid to marketing, good prices can be obtained and the cost of production is comparatively small.

There is great need for poultry education. Until this time little work has been done along educational lines in the State. The high quality of the poultry and the extent to which the industry has been developed have come chiefly because of the favorable conditions for such work. In 1911, there was established at Mountain Grove a poultry experiment station under the direction of T. E. Quisenberry, and the same year there was also established at the University a department of poultry husbandry under the direction of the writer. The educational lines should be directed toward increasing the products of the present flocks, encouraging the keeping of better breeds and the more successful marketing of the products of the hen. There is no limit to the amount of work which can be done among the producers relative to the manner in which their products are handled. Boys' poultry clubs should be organized, as they have been in some sections of the State. People should be taught to appreciate the rapidity with which eggs deteriorate and understand the principles the practice of which would permit them to market eggs in suitable condition. Poultry culture should be taught more in the public schools, because it affords an excellent opportunity for studying animal life.

When the Missouri farmer is taught the importance which the poultry flock plays on the farm, he will adopt better methods in his poultry culture, will have better stock, better equipment and will realize a greater profit from his poultry. When these conditions are satisfied, the Missouri hen will clinch her right to the title of poultry queen of the Union.

WORK OF THE AMERICAN POULTRY ASSOCIATION.

(T. E. Quisenberry, Member Executive Board American Poultry Association, and Director Missouri State Poultry Experiment Station, Mountain Grove, Mo.)

T. E. Quisenberry.

The advantages of being a member of the American Poultry Association are many, but I had not expected to be called upon so unexpectedly to talk on this subject, and therefore am afraid I cannot do it justice. I will simply mention briefly what the American Poultry Association is and what it is trying to accomplish.

It was organized nearly forty years ago and is now composed of about 5,000 members living in all parts of the United States and Canada and the island possessions of the United States. Its objects in the beginning were solely the making of a standard for pure-bred poultry, the judging and showing of poultry, and to encourage the breeding of standard varieties. It has broadened from time to time until it now touches every phase of the industry. It now seeks to promote the educational and investigational side of the business, and is also attempting to help the market end of the business by creating a standard for market poultry and eggs. There have been but few poultry departments established at agricultural colleges and experiment stations in any state but what state branches or members of the American Poultry Association have taken a very active and leading part in securing appropriations for this purpose.

The American Poultry Association is seeking to make it harder for crooks to exist among the ranks of poultrymen. The fraudulent practices of dishonest poultrymen in charging good prices for stock and eggs and then shipping worthless stock and eggs to their customers are soon to be a thing of the past if the present policy of the association is to continue. If one member of the association is wronged or cheated in a business transaction with another member, the one doing the wrong must right it or be expelled or suspended from the association. This brands him as a crook and makes it hard for him to do business. Some wealthy and prominent men have been put out of business in this way in recent years. Many such cases are being tried before the executive board of this association each year, and the poultry business is being put on a higher and safer plane of honesty and fair dealing. It behooves all to be members of the association, as it is a protection in either buying or selling stock, but does not apply to anyone outside of the association. No case can be taken up for those outside of the association.

The American Poultry Association is also trying to improve the quality of the market poultry and eggs being produced. They have a committee of experts at work preparing standard, which will tell a farmer or poultry raiser what constitutes a first-class marketable product, establishing uniform and recognized grades for different products, and giving some information as to how these can best be produced. The loss from bad eggs alone in Missouri each year is from one to two million dollars and in the United States it totals something like $45,000,000 loss annually. This is worth saving.

Without the American Poultry Association you would have no pure-bred poultry of any variety, no standard to guide you, no poultry shows and no judges. This association offers a large number of gold and silver medals and diplomas at poultry shows in all parts of Missouri which can be competed for by its members.

The poultry buyers' and shippers organizations and associations throughout the United States approve of the work this association is doing. A message was received from the President of the United States by the association during the last annual meeting of the members congratulating them upon their work and their efforts in building up one of the country's greatest industries. The work is also endorsed by practically all government and state authorities.

By becoming a member of this, the greatest of all poultry organizations, you enroll yourself among the State's and country's greatest poultry raisers. The benefits which may come to you are too numerous to mention, and you will do well to avail yourself of the opportunity to investigate further and become a member, especially so if you expect to ever do much along poultry lines, buying or selling poultry, or expect to become prominent in any branch of the business.

WHY JOIN THE AMERICAN POULTRY ASSOCIATION.

(E. C. Branch, Lees Summit, Mo.)

E. C. Branch.

Because it is the most influential, largest and strongest poultry association on the American continent and the greatest live stock organization in the world.

Because, as a member, you can compete for valuable silver medals and the $20 gold medals which are offered at each branch show. These are for members only. The winning of one will pay for a life membership. In addition you can compete for the beautifully engraved three-color special diplomas offered at all shows that are members of the A. P. A for A. P. A members only.

Because, by becoming a member your name is announced not only through the bulletin but throughout the poultry press, thus placing your name permanently before hundreds of thousands of poultry breeders.

Because, through its committees, the association is working for better express services, lower express rates and adjusting express questions. A special committee will help you secure satisfaction from the express companies.

Because you wish to vote on all questions, the decision of which practically governs the pure-bred poultry industry.

Because you want to identify yourself with the leading poultry breeders of the United States and Canada, and want to be recognized as a wide-awake, successful poultry breeder.

Because it is only through a strong organization in the Uuited States that this industry will receive its just support from the national and state governments, Because the American Poultry Association will not stand for members who are not straight and honorable.

Because our State has taken up the matter of poultry education and investigation, and the industry needs your counsel and co-operation to assist in perfecting such a strong organization that the State will recognize the importance of the poultry industry and keep us at the head of other states in the matter of poultry education and experiments.

Because one-half of your life membership fee of $10 comes back to your own branch to be spent right at home in promoting the poultry industry.

Because being a member is a guaranty of your reliability, as you can print the A. P. A. emblem in your catalogue and ads, and wear the button of the association, etc.

Because there would be no pure-breed poultry business if it were not for the A. P. A. Every bird you sell at a price above market poultry is due to the A. P. A.

Because the American Poultry Association is taking up the matter of the standards for market eggs and poultry, thus developing this branch of the industry.

Because you can be a member of the largest live stock organization in the world for life by the payment of the small fee of $10.00 with no further assessment or dues.

Because the association is taking up the work of getting out breed standards. You owe it to your breed to help this good work by joining the association.

The Missouri State Branch is working for your benefit and that of others in the building up of the poultry interests, which will bring more profits to you. Are you not willing to help? You can not invest $10.00 in any other way that will bring as great returns.

RAISING CHICKS.

(Prof. H. L. Kempster.)

Brooding chicks involves many additional problems aside from those of caring for the chicks. Chief among these are the care, character and quality of the breeding stock and the manner in which the chicks have been incubated. A chick has much of its destiny determined before it is hatched, and often any amount of care on our part so far as brooding is concerned will prove useless. The breeding stock then should come in for consideration in the discussion of brooding. Weak stock, showing poor constitution, is unsuitable as breeders. Fowls which have been troubled with diseases, such as roup, white diarrhea, etc., should never be used because of the transmission of the tendency to contract these diseases to their offspring. In the case of bacilliary white diarrhea, it has been shown at the Connecticut experiment station that the parent stock infect the chick during the formation of the egg in the oviduct. This is an example of when the disease itself is transmitted. In addition, chicks from stock of weak vitality do not possess the same amount of resistive power toward disease, and are more liable to contract various ailments, while chicks of poor vitality never make satisfactory growth. Careful selection then of vigorous, healthy parent stock is essential to successful brooding.

The care of the breeding stock is also an important factor. Excessive egg production, caused by forcing the hen for heavy production or even by the use of stimulants in the food, are not conducive to strong chicks. In general it is believed that immature stock, also, causes a weaker progeny. Birds which come into the breeding season after a long period of heavy egg production, rarely produce as vigorous offspring. Breeding stock should be compelled to take a large amount of exercise by being made to work for the grain fed in straw litters, and should be fed liberal amounts of green food. The feed should not contain a large percentage of meat foods, such as commercial meat foods or green cut bone. Experiments at the Ontario experiment station tend to prove that these, when fed to promote egg production, tend to weaken the vitality of the chicks. Also, breeding stock should be permitted range in winter during pleasant weather. Birds closely confined in crowded conditions, poorly ventilated or damp quarters, lice, cold, under and overfeeding, rations of only one grain, anything which tends to weaken the fowls will result in weakened vitality in the chicks. It is generally conceded that a large amount of trouble with incubators can be traced to improper care and poor breeding stock.

The problem of incubation is an important discussion. Artificial incubation is not perfect and many believe that the most successful results can be obtained by the use of hens for incubation. Assuming that the chicks are properly hatched, the next problem is that of brooding.

Brooding involves incessant attention upon the part of the attendant. To be successful one must not only be able to observe, but he must appreciate the nature of the chicks, what their feeds should contain, and also an understanding of their habits. Close attention to detail and patient, continual labor are necessary for successful brooding. Neglect to fill the small holes, carelessness in dropping tacks or bits of tin, failure to close the house at night, often result in scores of deaths which could be easily avoided.

Brooding is done by artificial and natural means, both of which are satisfactory, the former being adapted to the one who is raising chicks in greater numbers. Hens as brooders do not require as great attention, being able to teach the chicks to eat, and the question of heating is eliminated.

The greatest fault with brooding with hens is the question of lice. Hens used for hatching purposes should be absolutely free from vermin. This is accomplished by treating with insect powder before the hen is put on the nest and repeating the operation in about ten days. In general it is not considered advisable to dust the chicks before they are ten days old, because of the injurious effects of some brands of insect powder. With the use of hens there is also greater probability of head lice which should be treated with some kind of grease such as lard or vaseline. Chicks that do not appear to be doing well should be examined for head lice, and if found, the head and the back of the neck should be greased thoroughly.

Brooding is usually done by the use of individual brood coops scattered around the yard. These, when they are in large numbers, are the cause not only of unsightly places but, also, of considerable labor to properly take care of as soon as the brooding season is over. The most popular coop is perhaps the A coop with the back completely closed, slats being used to confine the hen. Small shed-roof coops are used, but possess little advantage and are difficult of construct. Barrels placed on their side and covered with roofing paper are used to good advantage and can be destroyed as soon as the brooding season is past.

To do away with the great number of small coops, the University is using a combination hatching and brooding coop as is shown in the drawing. This coop is used to set the hen. By being divided into four divisions four hens can be set at the same time. Their care is very slight, feed and water being kept in the small runway in front. As soon as the chicks hatch, the partitions are removed so as to divide the house into two parts, the chicks which come from the four hens are brooded by two. Then when the chicks need no hen the remaining partition can be removed, roosts installed, and the house used for raising the young. This house does away with the small coop for summer use.

A critical period in a chicks' life is when the hen weans her chicks. The chicks accustomed to heat will naturally seek a bunch of chicks and often large numbers crowd into one coop. Those in the bottom of the pile will sweat and have their vitality sapped out unless divided up into smaller flocks, this often being necessary after dark for several successive nights.

Chicks with hens should be confined until after the grass becomes fairly dry. Wet chickens become chilled by being dragged around through the grass by a hen. This chilling causes digestive disorders to arise, such as diarrhea. Chicks which get wet should be brought into warm quarters until thoroughly dry. The writer has saved large numbers by making a search after a storm and by placing them in a warm place for a few hours.

Artificial brooding is largely a question of supplying the heat necessary for the chick by artificial means and, also, it requires more attention on the part of the attendant, in that the chicks often need to be taught to eat and to seek their own shelter. It has the advantage in that large numbers can be kept in one flock, requiring less labor in feeding, watering, etc., and, also, there is greater freedom from lice than with the use of hens. Where chicks are brooded in large numbers, artificial methods are the most economical and are also under the more direct control of the poultryman. Artificial brooding is done by the fireless individual lamp brooders and by a series of brooders arranged along hot water pipes. The fireless brooder has created considerable attention during the last few years. The theory is that the chicks furnish a sufficient amount of heat to keep themselves warm by keeping the chicks in a small space and retaining the heat. Small boxes 18 inches square with material such as felt, or old comforters hung so as to touch the back of the chicks, the amount varying with the severity of the weather, constitutes the fireless brooder. The fireless is best adapted to partially heated quarters or when the weather is reasonably warm. People are usually more successful with lamp brooders. The fireless has small capacity—30 chicks—and requires more care than a lamp brooder. If all the chicks are out and one returns to the brooder, it will not warm up unless all are forced into the brooder. Because of this, for a few days it is necessary to watch the chicks very closely. The fireless is quite often apt to be poorly ventilated. Chicks are apt to be sweated in the morning and too much air results in their being chilled. Some of the experiment stations do not hesitate to make the statement that they do not produce as vigorous a chick, while many poultrymen claim that they incur too much detail and labor to be economically used. Another fireless is the use of jugs of hot water around which the chicks may hover, the water being replaced at regular intervals. In mild weather this method is worthy of practice.

Lamp brooders are of various types. Those which heat the floor are said to produce leg weakness, and nearly all have their heat radiated from above. The lamp brooder affords more perfect ventilation and the chicks require less attention, for they very quickly learn to return to the hover when cold. The care of the lamp incurs considerable labor, which is quite largely eliminated in the use of the hot water pipe system. For the man who is keeping poultry on a small scale, the lamp brooder is perhaps the best adapted. Outdoor brooders are simply little houses with a single unit of lamp brooders. The person who purchases an outdoor brooder has to pay the manufacturer for this extra equipment, and usually at a large price.

The Universal hover is being manufactured by several companies, this consisting only of the heating apparatus. Because of its economical features it has proved exceedingly popular. It consists of a lamp connecting with a circular drum through which the heated lamp fumes pass. On the upper side of this drum is a circular disk from which hangs felt. The drum is high enough from the brooder floor so the chicks can hover underneath. These hovers can be so arranged that the lamp may be on the outside of the house or on the inside. They can be set up in houses of any size and should be so arranged as to be easily cleaned. Most of the brooding at the University is to be by the use of these hovers. The brooding house at the University is 8x12 on runners so it can be moved. The lamps are placed on the inside of the house so as to permit more easy handling of the brooder and also avoid discomfort and trouble during stormy and windy weather. Three hovers are placed in each house, and the lamp fumes are piped out at the back of the house. Runways run down from the brooder the complete length of the front. This eliminates any possibility of a chick crowding into a sharp corner and not finding its way back to the hover. As soon as the chicks require no further heat the hovers are removed, roosts put in, and the house used for housing purposes until the next brooding season. This is a decided advantage over the outdoor brooder which is more expensive, which deteriorates in value because of exposure and is of little use except when being used for brooding purposes. Poultrymen should aim to make their apparatus of universal use, and this method is an example of how it may be done.

Perfect cleanliness is essential to successful brooding. In preparing a house for brooding, clean thoroughly and disinfect and also treat the brooder parts in a similar manner. Brooders should be cleaned as often as dirty and disinfected at each cleaning.

The brooder should be tested and warmed before the chicks are put in. The temperature should start at 95° Fahrenheit with a reduction of about 5° a week until 70° Fahrenheit is obtained. The correct temperature can best be ascertained by observation. Chicks that are too cold will huddle and crowd and will peep. At night the brooder should be warm enough so that examination will reveal a row of heads sticking out from the folds of the hover felt. Nature conditions are then being imitated, for usually the chick's body is kept warm by the heat from the hen while their heads will be exposed, thus insuring them an abundance of fresh air. The brooder floor should be covered with fine litter of some kind. Digestible material is preferred because of the liability of the chick eating some of it as food. Fine clover or alfalfa chaff is the best material. Any material used as a litter should be free from molds, for this fungus often causes lung trouble known as aspergilosis, which is the cause of many deaths in little chicks, while in addition the moldy material may cause digestive disorders.

Chicks should not be fed for 48 to 72 hours after hatching. Prior to hatching, the yolk is drawn into the body and furnishes food for several days. The first food should be fine grit or sharp sand in limited amounts. The grit stimulates the digestive apparatus so that the various organs begin to perform their functions and prepare the tract for the food. Chick food and rolled oats can then be fed by sprinkling in the litter or on boards. The chicks take readily to the rolled oats and as a food it is hard to excel. Stale bread crumbs mixed with raw eggs and finely chopped by running through a meat chopper, mixed with milk and fed in a crumbly, not sloppy, condition makes an excellent ration. Milk should be kept in fountains before the chicks. Some people prefer buttermilk to even the whole or skim milk. Some poultrymen prefer a dry mash during this period. This may be fed in shallow troughs, the feed being covered with a half-inch wire mesh to prevent wasting. In general it is best to keep the chicks slightly hungry and busy scratching during the day, with more liberal feeding in the afternoon so as to insure a full crop at night. After the first week, green food such as cabbage, lettuce, etc., chopped fine should be fed. Care must be exercised in feeding grass to use that which is tender, for often the crop of a chicken will become compacted with dry material. After ten days the mash should contain bran, middlings, corn meal, grit and small amounts of charcoal, beef scraps and bone meal. By mixing this with milk, the chicks can be induced to eat greater amounts. The University keeps the dry mash before the chicks and feeds the mash moistened daily, about four in the afternoon. The wet mash should be thoroughly cleaned up at each feed, for it quickly sours, and a mash soured by fermentation will cause digestive disorders. At the end of four weeks the chick foods should be replaced by coarser grains such as wheat, cracked corn, kaffir corn, etc.

Dry mashes which are fed may vary in the materials used. The following may prove suggestive:

Wheat bran, 2.
Corn meal, 4.
Middlings, 2.
Beef scrap, 2.

Another ration suggested by the Ontario experiment station is:

Blood meal, 5.
Charcoal, 3.
Buckwheat meal, 20.
Corn meal, 20.
Oatmeal, 20.
Middlings, 20.
Bone meal, 5.

The beef scrap should be sifted very fine, and all should be free from molds. Corn meal is quite often moldy and is frequently the cause of trouble. Changes in the rations should be made gradually. In general, sour milk is preferred to sweet because of the danger of the milk being sour. Sour milk fed to birds accustomed to sweet, will set up diarrhea. By the use of sour milk the chances of making the change are eliminated.

Attention to details insures successful brooding. Tacks, bits of tin and even small nails are readily picked up by the chicks.

Peeping incessantly indicates hunger or cold, and the trouble should be remedied. Also keep the chicks dry and the brooder clean, liberally disinfecting at each cleaning. Clean water and fresh air are also essential. Avoid filthy drinking utensils, and use fountains which are readily cleaned, and such that the chicks cannot become wet. Failure to shut the chicks up at night often results in losses because of cats and rats, while wet grass weakens their vitality. As soon as the chick requires no further heat, install roosts and remove the hovers. Have the houses close to ranges such as corn fields, etc., where clean range, bugs, worms, grasshoppers and shade furnish ideal growing conditions, and then the problem of rearing is comparatively simple.

RESOLUTIONS.

Whereas, The Missouri State Branch of the American Poultry Association has just held a very satisfactory and profitable meeting during Farmers' Week at Columbia; therefore, be it

Resolved, That we, the members of this Association in annual convention assembled, do hereby express our appreciation and sincere thanks to those in authority at the University for providing us with rooms in which to hold our business meetings, to the State Board of Agriculture for giving us a place on their published programs, and also to Prof. H. L. Kempster for the courtesies shown the members of this Association during this meeting. We desire to also commend the work of Miss Elizabeth Hodge and the members of the Boone County Poultry Show, with whom our Association medals and diplomas were offered, for their splendid work in building up one of the largest and best shows in the State.

Resolved, That a copy of these resolutions be spread on our minutes, and also a copy be furnished each of the above who have contributed to the success of this meeting.

T. E. QUISENBERRY, Mountain Grove, Chairman.
MRS. R. LEE ALFORD, Vandalia,
W. D. HART, Ashland,
Committee.

Missouri Cattle Feeders' Association.

OFFICERS.

President—S. P. Houston, Malta Bend.
Vice-President—C. W. McAninch, Hughesville.
Vice-President—John A. Rankin, Sr., Tarkio.
Secretary-Treasurer—H. O. Allison, Columbia.

MISSOURI CATTLE FEEDERS' MEET.

(H. O. Allison, Secretary.)

H. O. Allison.

The third annual meeting of the Missouri Cattle Feeders' Association was held in the agricultural building at Columbia, Mo., on January 15, 16 and 17, 1913. Greater interest than has ever been expressed at an annual meeting before was evident by the crowded lecture room at every session.

Addresses by Dean F. B. Mumford of Columbia, President S. P. Houston of Malta Bend, Professor W. A. Cochel of the Kansas Agricultural College, President C. S. Jones of the Chicago Live Stock Exchange, John T. Alexander of the Chicago Live Stock Exchange and J. R. Thomas of Columbia, were particularly interesting and educational.

At the business session the organization committee recommended that the scope of the association be extended to include the swine and sheep feeding interests. In accord with their recommendation, the name of the association was changed to the Missouri Cattle, Swine and Sheep Feeders' Association, and slight changes were made in the by-laws in order to accommodate the interests which sought admission to the organization.

The officers elected for 1913 are:
President, S. P. Houston, Malta Bend, Mo.
Vice-President, C. W. McAninch, Hughesville, Mo.
Vice-President, John A. Rankin, Sr., Tarkio, Mo.
Secretary-Treasurer, H. O. Allison, Columbia, Mo.

The following resolutions, which were unanimously adopted, set forth some of the points discussed in the business session:

RESOLUTIONS OF THE MISSOURI CATTLE, SWINE AND SHEEP FEEDERS' ASSOCIATION.

Whereas, A revision of the tariff duties will work to the disturbance of the agricultural interest, we request that the tariff be scientifically investigated, and that if revision be needed, each schedule be revised singly.

Resolved, That we, the Missouri Cattle, Swine and Sheep Feeders' Association in annual session hereby protest against the proposed removal of import duties on live stock and meat products until such reduction has been scientifically investigated, deeming premature action as being detrimental to the live stock interests of our State.

Resolved, That we recommend to the Legislature that liberal support be given to the College of Agriculture, and especially the live stock department.

We also recommend that the work of the Veterinary Department of the College of Agriculture, which has contributed towards eradication of diseases among live stock, be liberally supported and continued.

Resolved, That we suggest that the Missouri Legislature, now in session, formulate a law governing the production and sale of hog cholera serum.

Resolved, That we, the Missouri Cattle, Swine and Sheep Feeders' Association, do hereby call your attention to the qualifications of Mr. Henry J. Waters for the position of Secretary of Agriculture in the cabinet for the coming presidential administration.

Mr. Henry J. Waters, president of Kansas Agricultural College, is one of the foremost men in agricultural work today. As dean of College of Agriculture at the University of Missouri he organized one of the strongest, most efficient colleges in America. As president of the Kansas College he has made great strides in the progress of agriculture. He is deeply grounded in practical agriculture, being a farmer's son. He is also one of the foremost scientifically trained men in America. He is honest, efficient and energetic. We, his friends, endorse him. President Waters is not seeking the appointment. We believe that the appointmnet should hunt the man.

ADDRESS OF WELCOME.

(F. B. Mumford.)

I do not know whether I can quite agree with the speaker that I am altogether happy at this time for performing this duty, because I cannot claim that it is a particular pleasure for me to speak in public. But from another point of view it is a very great pleasure for me to extend to you an unqualified and cordial welcome.

I am peculiarly interested in the Cattle Feeders' Association. If there is any one organization in which I take greater interest than another it is this one. In the first place, my life work up to very recently was chiefly concerned with animal husbandry and that field was very attractive to me, and I am not at all sure but that the attractions of that field are so great that I may some day decide that the position of professor of animal husbandry is a more pleasant occupation than acting as dean of the Agricultural College. The further I get away from the position which I occupied the more pleasant it seems to me, and in animal husbandry my work was chiefly in the investigation of problems of the cattle feeder. For twelve years I carried on a series of investigations in cattle feeding, and therefore the discussions which you will have here and the problems which concern you are problems of which I have some knowledge from experience.

I have somehow come to believe from the observations which I have made that the cattle feeders, and the cattlemen generally, occupy a somewhat peculiar position among other lines of stock raising. I do not know what the psychology of the problem is because I am an agriculturist and not a psychologist, but somehow the big brainy fellows in the live stock business are generally in the cattle business at one time or another, and the intelligence that is represented by the men who handle cattle is of the highest order among the animal husbandry men.

Now, gentlemen, you have met at a time when the problems of cattle feeding are real problems, and whether you will be able to solve the question or not as to how the consumer is to get cheaper meat and how the farmer is to get more for his cattle at the same time, is a problem.

Now, the difficulty with our business is the uncertainty which surrounds it. We put a bunch of cattle on feed today and by the time they are fattened and ready to sell the market has gone down and we are out of it. And then if we all agree that cattle feeding is unprofitable and all go out of the business, in some mysterious manner the price always goes up. If any organization of the cattle industry could be brought about so that there should be some kind of stability so that the prices of finished cattle should have a stable value, not six cents this year and ten cents next year, it would solve most of the difficulties that confront the cattle feeder. I am sure you agree with me that that is true.

Now, I myself am not expecting to pay less for the beef which I eat. I have not been able to solve the problem of how it is possible for the farmer today, on land worth sixty to one hundred dollars or a hundred and fifty dollars an acre and with labor twice as high as formerly, and with the ranges turned into farms, I have not yet been able to work out to my satisfaction how it is possible for us to reduce materially the cost of the finished steer. If the people of this country want to eat good beef they will have to pay more for it than they have paid in the past. I am not speaking now of a temporary condition or of the prices which now prevail, but I am satisfied that the competition of the dairy cow and the sheep and the hog with the beef steer will, unless beef maintains a relatively high level, certainly crowd the beef steer off of the map, unless average prices increase. But I am expecting that we shall come to such a level of respectable prices for the finished beef animal that it will be profitable for men who want to produce beef cattle to continue.

We have come to a point in our animal husbandry operations when we cannot longer afford to feed the corn and the hay and the other products which we produce on our farms to an unimproved animal. If there is one fact that has been more clearly demonstrated than another by the investigations of the experiment stations it is that there is a very great distinction in different animals in their ability to use food and make finished product of it. I think I have used this illustration before and it will perhaps bear repeating. There are some cows that will produce 125 pounds of butter in a year on a given amount of food. There are other cows on the same food that will produce 250 pounds of butter. There are some horses that will eat a bushel of oats and trot a mile in two minutes. There are other horses that will eat the same kind and quality of oats and be hitched to the same sulky and driven by the same driver on the same track and they are doing pretty well if they get around in four minutes. There is no difference in the oats, no difference in the track; it is altogether a difference in the efficiency of the two animal machines. One horse is able to extract the energy which makes it possible to trot a mile in two minutes and the other horse does not possess that ability.

There are some beef cattle that are fed for a period of six months and then placed on the market that will sell for six cents a pound. There are other beef cattle, fed for the same length of time on precisely the same feed and under the same conditions, that will sell for eight cents a pound. Now, the cattle feeder who insists upon feeding good products from a $100-an-acre farm to the six-cent steer when he can just as well feed it to an eight-cent steer is not a modern farmer. He is flying in the face of the certain facts that are demonstrated in common sense and in all the investigations that have been conducted. I do not wish to be misunderstood. There is another factor which is very well understood by us all. If the margin between the buying and selling price is deducted it sometimes makes it profitable for us to handle six-cent cattle. Of course, if you can buy cheap enough and sell high enough any of us can make money feeding cattle, and it makes little difference what kind of an animal you buy. You might just as well buy a Jersey steer as to buy a good Shorthorn or a Hereford steer if you can buy cheap enough and sell high enough. Now, don't anybody go away and say I advised feeding Jersey steers. If you do I will regret that I have been so unsuccessful in making clear my meaning.

I want to call your attention to this fact: The breeders of pure-bred beef cattle have believed honestly that the Shorthorn, the Hereford and the Angus were more profitable to feed because they could make more beef from a bushel of corn. Now, the breeder of these cattle has talked that so long that you and I have believed it, and if I should say to you that the average Holstein steer or the scrub or long-horned Texas of the same age and condition will produce as many pounds of beef for each bushel of corn fed to him as the Shorthorn or the Hereford you would question my statement. Of course, you are all too polite to shake your heads while I am looking, but I must say to you, gentlemen, that in all the investigations that have been conducted it has been clearly demonstrated that the difference between the good steer and the common plain steer is not in their ability to make more beef from a bushel of corn, but it is rather in the ability of the Shorthorn, the Hereford or the Angus to produce a better quality of beef. We feed a certain amount of corn and hay and grass to a Shorthorn, Hereford or Angus steer and he makes from that feed, porterhouse, sirloin and prime of rib cuts which sell on the market for 35 cents or in the eastern cities sometimes for 50 cents a pound. We feed the same materials precisely to the Jersey or the scrub and he makes from the same materials the same gain in weight, but he puts the fat mostly around the internal organs, and he certainly does not make sirloin, porterhouse and prime of ribs. He hasn't any place to put any such cuts. He hasn't the back and the loins. So if that is truthful we ought to be giving that consideration; the fact is, in feeding good beef cattle the feeder produces the animal that sells for the higher price on the market and it sells for the higher price on the market because they yield a better product and while we may get the same gain per bushel of corn from even a Jersey steer, the gain is much less valuable. I am not claiming the same gain per animal, but the same gain per bushel of corn. The reason we feed good cattle is because they bring higher prices on the market.

This is a pretty long address of welcome, Mr. President, but I certainly appreciate your attendance at Farmers' Week. It has been a very gratifying thing, indeed, to us at the college that the farmers of Missouri have shown their appreciation of our efforts in putting on this farmers' short course and in throwing open our laboratories and class rooms during this week. We welcome you most cordially. I hope your visit here this week will be profitable and extremely pleasant, and that you will come again.

ADDRESS.

(President S. P. Houston, Malta Bend, Mo.)

S. P. Houston.

At the close of another year it may not be amiss to congratulate the cattle feeders of the State upon the measure of success and the abundant prosperity which has rewarded their efforts. The high level of prices which has been maintained has been such as to excite the envy of some and to provoke the criticisms of others, but the results attained have been due to the natural trend of events, rather than artificial causes and manipulations.

What the present year may hold in store for us will depend upon the amount of intelligence and conservative good judgment we put into our business, for numerous and great as have been the obstacles overcome in the past, the future looms up with even greater and more perplexing problems. The past year bears with it a record in the live stock industry which doubtless will not be repeated again within the lives of the present generation. The causes leading up to the present conditions are not of recent origin, neither are they the result of spasmodic seasons of over or undermarketing, after which the reaction may seem premature and the advance in prices appear inflated. On the contrary, the causes are well defined and the shortage of beef-producing animals appear to be world-wide, rather than national. By the same logic of events it is also evident that radical changes must be brought about before a final solution of the problem will be obtained.

Economic tendencies and principles bear upon our business in various ways, and if we hope for any great measure of success in the future, we must study and plan to meet new conditions which are being forced upon us. If we hope to continue an important factor in the make-up of the agricultural world and secure to ourselves that measure of justice and a fair share of prosperity which our industry demands, we must cultivate and encourage a friendly co-operation of all kindred associations, to the end that our influence may be widespread and result in the greatest good to all.

The necessity and importance of organization among all classes of meat producers becomes more evident and urgent each year. Organization in one branch of a business means uncertainty and possibly ruin to the unorganized portion and demoralization to all. As our business is conducted today we find both ends against the middle, and chaos rules the whole. The elements of uncertainty are such as surround no other business of equal importance in existence, and the very presence of this uncertainty has induced many men to give up live stock farming and confine their operations to a strictly agricultural basis.

Unlike many large industrial enterprises we can never hope to eliminate competition, but in order to compete we must organize for competition, and thus be able to enjoy a greater measure of security and protection to our business, thereby subserving best our individual interests.

Industrial misunderstandings often occur by reason of the fact that men engaged in one line of business do not comprehend that degree of corelation and interdependence which should exist among all. An intelligent conception of the duties and privileges of each and positive knowledge of the conditions and necessities of the various related occupations will do much to arouse that spirit of co-operation which seemingly is an unknown quantity today, that spirit which pulls together the forces which will develop the greatest good to all, rather than the few, is yet to be put into practice in the conduct of our affairs.

The one lamentable feature in connection with the business of the farmer and the cattle feeder is that he is powerless to dictate at either end of the market; when he buys he must pay the other fellow's price and when he sells he usually submits to the same treatment.

Our business alone has not reached a crisis; the fact is, civilization the world over seems to be due for a readjustment. Thirty or forty years ago sixty-five per cent of our population lived in the rural districts and labored and produced the things necessary to the health and comfort of all. Today sixty-five per cent live in cities and have thus augmented the army of consumers. A very forceful reason, this, as one of the principal causes of the high cost of living—too many consumers, too few producers. If present conditions remain, or the percentage of urban population is increased, well may we reflect upon the theory of the fated Malthus, for what in his day and generation only seemed the idle fancy of a dreamer may yet be within the realms of probability.

The tendency of every interest dependent upon the live stock industry is to take just a little more toll each year. The rates for transportation have been materially increased, and the charges for commission service have been advanced at our principal markets, and in each instance the shipper has received nothing in return by way of better train service or greater skill from the commission man. Another injustice imposed upon the shipper is the practice adopted at some of our markets of taxing each car lot a certain fee in order to create a fund for future indemnity in case of loss by fire. It seems to me that the regular charges ought to be ample to cover every element of risk and that yard companies ought to be made to bear the same measure of responsibility that transportation companies are made to assume under the law in the care and handling of live stock.

If we accept these unreasonable advances without protest, it is not a matter of little consequence if additional burdens are added to our load. Concerted action and persistent effort will discourage these unfair advances, but individual opposition counts for naught. Had it not been for the fierce fight made by the various live stock and agricultural associations of the country, aided by a loyal agricultural press, in opposition to the recently proposed farmers' fee list bill, does any one imagine that we would not today be meeting the products of the world with the surplus from our farms and feed lots?

The idea of a tariff upon agricultural products and live stock in the past has been more or less fiction, for in all these years we have had a surplus, and in finding a market for it we also found that we must sell on a level with the surplus products of all the world. But today we are beginning to realize that conditions have changed, consumption more nearly equals production, and the home market is the most accessible and remunerative. Reduced to a cash basis, it is estimated that 94 per cent of the American mines, the farms and the factories are consumed at home, hence it would seem that the great agricultural and live stock interests of our country are just now coming into possession of their long deferred heritage, and the maintenance of adequate tariff laws in the future becomes a matter of supreme importance.

From the manufacturer's point of view the maintenance of adequate tariffs upon the products of the farm and feed lots is but a hindrance to cheaper production in industrial lines. But the country has finally settled down to the proposition that tariff duties should measure the difference between the cost of production at home and abroad, and on this basis the farmer and meat producers of America are willing to take their chances with the world. All we ask is a square deal, an even chance in the race of life. Then if we fail or fall by the wayside, it will be because our numbers have so decreased in proportion to city population, and that we have not lived up to our opportunities, that we have ceased to be a factor in politics, while in society we have become a hybrid, and in finance a weakling. If we would avoid these conditions we must do a little independent thinking and a great deal of strenuous kicking on our own account.

Rapid increase in population and gradual and persistent decrease in the number of cattle has made the relation between supply and demand more acute than most people imagine. A few figures may impress this fact. In the year 1907 we had 72,534,000 cattle; in the year 1912 we had 57,959,000; a loss of fourteen million cattle in six years and during the same period an increase of more than fourteen million in population. In view of these conditions, is it any wonder that we have experienced the highest prices on the open markets since the Civil war? Most of us have grown gray listening to this "scarcity-of-beef-cattle" talk and when the much heralded time arrives we find ourselves still repining against that evil today.

To detail all of the causes leading up to that situation would serve no useful purpose here, save to direct our energies along a different course, point our footsteps to new paths, and excite us to adopt safer methods for the future.

The feeding problem, always difficult and sometimes complex, presents itself this year in more aggravated form than ever before; abundant grain crops, cheap forage, and feeder cattle selling at the highest price ever known, adds another equation to the problem, which in the final analysis may set all our calculations at naught. It does not necessarily follow that because prices of foodstuffs are cheaper that the price of meats will be materially lowered to the consumer; on the contrary, reckoning the enhanced cost of the animal, increased land values, and larger public service charges, it seems reasonable that the present level of prices ought to be maintained if the producer is to receive fair compensation for his services. But uncertain industrial conditions may blight all our hopes. The buying power of the consumer may be curtailed and soon the effects of a retrograde market will fall heavily upon the man who has taken a long chance to supply a juicy steak for the American breakfast. The fear of a beef famine seems to possess the entire country and the live stock press. The live stock markets, and incidentally a few commission men interested in more commissions, seem burdened with anxiety lest we all retire from business and force the family to get up to a steakless breakfast and sit down to a soupless dinner. But my observation is that the average feeder is not a "quitter"—he never retires until he reaches the age limit or the banker refuses him credit.

Doubtless there is cause for alarm, but the cattle feeder is no magician or wonder-worker. If the consuming public demands cheaper living, then it must contribute something towards cheaper production. It is a safe guess that cheap meat is a thing of the past; corn at forty cents is no higher relatively than it was twenty years ago at twenty cents; land values have more than doubled; implements and work stock, labor and fixed charges have kept pace; so why should we be expected to sell beef at four cents which costs eight cents to produce? As yet I have failed to find a reasonable solution of the problem of the high cost of living, neither have I found a rational excuse for it, so it is not within our province to fix the blame, nor cure the evil; rather we will stay by the steer, take the lean years with the fat and beat the game when we can.

It has been truthfully said that the malady of our age is wastefulness. Endowed with boundless natural resources we have dissipated them as no other nation has done, deceiving ourselves in the belief that our storehouses were inexhaustible. The situation presents a rude awakening. With relentless energy we have robbed the soil because it was the simple and easy way to quick returns, we have denuded the forest because the spirit of destruction demanded, yet other virgin fields to satisfy the appetite or increasing population, and thus the conquest has gone on until depleted acres refuse to give up their accustomed toll. Stimulated by hope and dominated by fear, it would seem that this year ought to mark the end of our riot of resources and incite us to better business methods.

Paradoxical as it may seem, the leanest years have been our fattest, and were it not for the hope that we may be able to "beat the game" again, no doubt many of us would be tempted to abandon the feed lot this year, but experience has taught us that a change in occupation often proves disastrous; men who have spent the best of their lives in any pursuit are slow to adapt themselves to new conditions. The evils of which we complain today are largely of our own making, and when thoroughly convinced of the error of our way, I have faith that energy and good judgment will find a remedy, that in this fast age of complex business activities the old methods which at best yielded only a scant remuneration will be abandoned and that keener perception, advanced ideas and closer application will suggest better methods; that in studying to better conserve our resources we will also learn to eliminate waste and husband the forces which, when intelligently directed, will again restore our business to normal conditions.

HOW TO PREPARE CATTLE FOR MARKET.

(John T. Alexander, Chicago, Ill.)

Before taking up the subject upon which I am to speak, allow me to say that I am very glad, indeed, to be with you today. I have many personal friends in Missouri and have frequently said to my wife and Illinois friends that the Missouri people are the most clever in the world. I want to congratulate the cattle feeders of Missouri on their organization. I believe it is a step in the right direction. Indiana has a cattle feeders' organization which has been organized several years. Prof. Cochel, now of Manhattan, Kan., and Dean Skinner of Indiana were the organizers, and that association is growing, meets twice a year, in April and November, and is undoubtedly doing a great deal of good.

J. T. Alexander.

Packers and stockyards people are well organized, as you all know, and packers keep well posted on the supply of stock on feed in the country. Why should not the cattle feeder be just as well organized. I believe if the cattle feeders of Missouri and the middle west were fairly organized, each state and by counties, and knew the supply of cattle on feed for winter, spring and summer periods. you could in that way regulate the receipts to some extent. I know it would probably be a difficult matter to do it, but a thorough organization could accomplish a great deal, and in that way avoid glutting the market at certain periods. You all know that if you give us excessive receipts for a week or two it results in sharp declines, and you have also noticed, too, that when we receive light receipts for a week or two the market regains that decline very quickly. I believe that if by thoroughly organizing all over the country and keeping in close touch with just what is on feed and what time of year it will be marketed, you can control the live stock market to a considerable extent. I hope you will work and build up this organization, talk to your neighbors, interest them, get them to join the organization and work together, and I am quite sure that you will never regret it and will accomplish great good.

We have all kinds of cattle feeders, some who buy the strictly choice kinds, make long feeds and practically top cattle when they are ready for market, others who buy good cattle. Then we have a class of feeders who buy the medium and common grades that make good butcher cattle or cheap dressed beef cattle when they are ready for market.

Now my observation has been that cattle feeders as a rule, one year with the other, make money, whether they make a long feed or a short one, whether they handle the best feeders or the common ones. Yet, there are some feeders who are not successful, whether they make long or short feeds, whether they handle good cattle or the common ones. Very much depends on the judgment a feeder uses in buying (I might say, well bought is half sold), using good judgment about marketing them, and classifying them properly. I never knew any one who could classify fat cattle as well as Mr. Titus Sudduth of Sangamon county, Illinois, who died several years ago. He fed cattle quite extensively and very successfully. He handled some of the very best and made market toppers, also fed the medium to good kinds and frequently some of the common and cheaper kinds, but he always made them fat and classified them as to quality, weight and size, and used good judgment in marketing them in small lots. In this way his average price was much better than if he had marketed them in large droves. Many of our most successful feeders only market a few cars at a time.

We personally know many feeders who have been very successful in handling the very best cattle and making long feeds, men who keep books and know each year what they are doing. We have known other feeders of good cattle who were not successful, in fact money losers. Then again, we have many feeders who have been very successful for many years, buying a good class of feeders and making short feeds—60, 90 or 120 days. Another class of feeders who are successful are the men who buy the cheap, aged feeders or the common kinds, weighing from 800 to 1,000 pounds, in the late fall or early winter months, making butcher cattle out of them and having them ready for market during March, April and May. Butcher stuff and butcher cattle are comparatively high every year during the late winter and spring months, and frequently high during the month of June, but it is usually not good policy to market common beef cattle later than the first of June, as grass cattle from Texas and the Southwest frequently commence coming during the month of June which affects the market very materially for butcher cattle; and, as a rule, common natives are bad sellers during the summer months as they come in competition with range cattle.

It is my opinion that the greatest number of cattle feeders make more money on short feeds than they do on long feeds, and for years past cattle men who have wintered their cattle on blue grass, stalk fields and clover hay and have given them a short feed of corn during the summer months have been the ones who have made the most money. Land has advanced so rapidly in the corn belt the last few years and corn has been selling so exceedingly high, with the shortage of stockers and feeders and at the high prices they have been commanding, it has put the cattle feeder to guessing whether it would pay him to continue in the cattle business, but I look upon the silo as his salvation. With the silo you can winter your cattle very cheap, put them on grass and corn and have them fat in 90 days, or you can feed corn with your silage mixed with cottonseed or cotton cake, and have them good and fat on six months' feed, and your cost of gains will be much cheaper than if you fed them on corn and used hay for roughage.

I have been asked to say something to you in regard to the different kinds of feed. My own experience in feeding dates back 25 to 30 years, when we full fed our cattle. We depended entirely on shock corn, ear or snapped corn then, and our cattle got very fat if we gave them enough of it and fed them six months, but my observation during the last few years in visiting different feed lots in many states as well as different experiment stations, that by mixing cottonseed or cotton cake, or oil meal, alfalfa meal or molasses feed with your corn you can reduce the cost of your gains very materially and get much larger gains in the same length of time, and your cattle come to market in better condition; their general appearance is much better as their hair is slick and fine. Just here I would like to impress upon your minds the great and beneficial work that our experimental stations are doing at our agricultural colleges all over the middle west. From personal acquaintance with President Waters of Kansas, Professor Curtis of Iowa, Dean Mumford of Missouri and Dean Davenport of Illinois, as well as Professor Mumford of Illinois, Dean Skinner of Indiana and their splendid assistants, Professor Cochel, Professor King, Professor Rusk and Professor Allison, I can more fully appreciate the great and beneficial work they are doing for the agricultural colleges and the live stock industry.

The silage test of Messrs. Skinner and King of Indiana agricultural experiment station on their last beef making experiment with silage shows interesting results, and the bulletin is worth reading and studying by every beef maker in the corn belt.

In conclusion, just a word about feeders. My experience has been to buy rugged cattle with good bone of any of the beef breeds regardless of color—cattle as even in size, age, weight and flesh as possible.

Blessed is the farmer! I consider it one of God's greatest blessings to be a tiller of the soil and to see the crops grow and mature, to live in the sunshine and drink in the pure air, and to commune with nature.

PRODUCTION OF FEEDING CATTLE.

(Professor W. A. Cochel, Kansas State Agricultural College.)

W. A. Cochel.

It is with a good bit of pleasure that I come back to the University of Missouri for the first time when college is in session to talk before the men in my own home community, where I am known possibly as well as I am any place else in the whole country, on a question that I believe is of vital importance not only to Missouri feeders but all cattle feeders of Kansas, Iowa and Illinois and all the neighboring states. In this country, as in other countries, we find the foundation of all beef cattle is grass. Whenever we find a country that has broken up the pastures and has gone out of the production of grass and pasture crops into the exclusive production of grain crops, we find beef cattle eliminated. At the same time the farm land invariably produced less per acre than it did when used for the production of beef.

If we study the production of cattle and the cattle business in this country, we find that the first cattle brought to America were brought to the Atlantic seaboard, where they grazed on the rich pastures in the lowlands of that country, and exported at anywhere from three to four or five years of age. That is, they were brought here to simply graze and turn into a marketable form the crops which were produced. As states developed and land became more valuable, the production of cattle was eliminated. That is, the farmers of the eastern section of the country went into diversified farming, market gardening, into dairying, fruit growing and in other things than the production of beef. At the same time beef cattle were driven over the Alleghenies into Ohio, Illinois and Indiana and grown on the pastures that were just as rich, pastures that would produce just as many pounds per acre as the farms in the east, and driven to the seaboard when ready for export. Later, when railroads were built into that country, the beef breeding herds were driven into Missouri, Iowa and Nebraska. The western ranges opened up as transportation facilities provided a market for corn and wheat and other products of the farm, resulting in beef cattle being driven still farther west where the pastures were not quite so valuable. Coupled with this change in the beef-breeding industry came a demand for cattle feeding purposes, which has caused a shortage of cattle today. With this increased demand for feeding cattle has also come the cutting up of western ranges. All of these factors have helped to bring about a shortage in the production of beef, not only in Missouri, but in every section of the country.

Another phase of the beef cattle proposition which your president has touched upon and which caused me to take up the study of animal husbandry when I was in college possibly more than any other thing, was the fact that almost invariably the most prosperous farmers in this community were the men who were handling beef cattle year in and year out, the men who were feeding the crops that they grew on their farms and converting them into beef. In Indiana the same conditions prevailed as in Missouri. In any direction from the Indiana experiment station, the most attractive farms in the state were beef-cattle farms. It interested me so much that a census of the state of Indiana was made by sending out a list of questions to the cattle feeders. The replies indicated that the average value of land in Indiana was given as $60 per acre, but the average value of the land on which cattle feeders were living and farming was slightly over $100 an acre. At that time the average yield of corn in the state of Indiana was less than 35 bushels per acre. The average yield reported by the men who were feeding cattle was slightly over 50 bushels.

All of you who have studied agricultural statistics probably know that Lancaster county, Pennsylvania, markets a larger amount of agricultural products annually than any other one county in the United States. When I went through that county on the Pennsylvania railroad for the first time, I saw that it was very deep soil and knew it was a very productive soil, but I wondered how they kept up the production of crops in that community where they had been farming the land for over two hundred years. There was no indication of it as we went through on the railroad, but off the train and out in the country was found a great beef cattle feeding industry. In that one eastern county that year they fed 60,000 beef cattle.

They feed in a little different manner because they appreciate the value of the soil and the value of the production of crops to a greater extent than we do in the west. A man does not feed 100 steers or even 30 or 40 steers, but in most cases 5 or 10. These cattle are fed largely on rented lands, which is one of the few sections of the United States where beef cattle are fed for market by tenant farmers. In Missouri, Illinois, Indiana and Kansas, the cattle feeders are the men who own their own farms. The Lancaster county farms are rented on a share basis. If the tenant markets his corn, oats and wheat, the money received is divided with the landlord. The tenant is allowed to feed all of the hay, but divides with the landlord the income from that sold from the farm. That is the basis of the system of cattle feeding they have in that county. That is what they believe in doing, because of the fact that it builds up the fertility of the soil. The land owner believes in it because he knows that when the tenant feeds that roughage he will buy a little more grain or concentrates to feed with his roughage, and thus he is building up continuously the fertility of the soil year in and year out. This is probably far from the subject that has been assigned to me this afternoon—The Production of Feeders.

Feeders are produced, and have been produced in the past, and possibly will be continued to be produced in the future, on the land that is especially adaptable to grass. That is, while the silo may come in to a very large extent as a supplement to pastures for the maintenance of beef breeding herds, yet we have not reached the stage where a man can produce market cattle unless he has a large amount of pasture available for them. Whenever the land becomes so valuable that it cannot be utilized for the production of grass, it is too valuable to feed for breeding cattle. In the cattle feeding industry there is practically no relation between the value of the land and the feeding of the beef cattle. A bushel of corn or a ton of hay, straw or silage will not go any farther in fattening beef cattle, whether it is produced on land worth fifty or two hundred dollars per acre. Whenever land advances in value to such an extent that we can no longer grow grain and raise feeds adaptable to cattle, it will be so valuable that cattle cannot be fed on it. Until that time comes, the cattle feeding will continue to be a leading industry in agricultural communities.

The cattle producer must necessarily seek those sections of the country and state where he can afford to keep his land in permanent pasture. In other words, we use cattle on our farms for two purposes: In the first place, to supply a market for the crops produced, whether corn, hay or grass; in the second place, to build up and maintain the fertility of the soil on which these crops are produced. If we keep those two factors in view we will have the entire business of cattle feeding in a nut shell. There is land in nearly every section of Missouri which must be kept in permanent pasture. Other lands that are being plowed and farmed today would be more valuable if they were kept in permanent pasture, and through a series of years they will return as much in the form of feed as in the crops that they now grow.

At the Kansas experiment station four years ago the authorities bought 100 head of beef breeding cows—25 Angus, 25 Herefords, 25 Galloways and 25 Shorthorns—and placed them at the Hays station, where they had an abundance of grazing land, to determine the cost of producing beef cattle under western conditions. While the conditions in the western part of Kansas, in the short-grass country, are not the same as in Missouri, the principles which control the production of beef in that section are the same. They bought two-year-old heifers which weighed at the time of purchase 743.5 pounds, and after keeping them three years and raising three crops of calves, they weighed 1,187 pounds. In other words, instead of having deterioration in the value of the foundation herd, used in the production of calves, there was an increased value due to the increased weight. When dairy cows are used three years, they are not worth as much as when put into the dairy. A sow that raises pigs three or four years depreciates. The average increase in value of these experimental cows amounted to a gain of $25.89 on each one that had been purchased after producing three crops of calves.

Each individual consumed 19,533 1-3 pounds of roughage during the three years. Much of this roughage consisted of corn and Kafir stover, wheat straw and other by-products of grain farming such as are produced in that section. These feeds have little or no commercial value in years of plenty, but serve as the basis of a maintenance ration for beef-breeding cows. There are thousands of tons of cheap roughage going to waste in Missouri today because the labor of putting it into marketable form is greater than its value. During that same period each individual cow consumed but 270.7 pounds of grain, which gives an insight into the production of feeders. That is, a man who goes into the business must be on a farm that produces roughage as well as grain. In this experiment there were fed 19,000 pounds of roughage as compared to 270 pounds of grain. The cows were on pasture during that same period for about 18 months—that is, three entire summers. The total cost of the feed supplied and the pasture was $77.72. During the time this experiment was conducted the cost of grazing mature cattle was $4.50 per head for the entire season, whereas, next summer the cost will be from $7.00 to $8.00. Estimating the cost of feed and taking from that the increased value of the cattle leaves the net cost of producing one calf as $20.46 for an average of three years from each of the cows. With these figures in mind, assuming that the cows must necessarily consume a considerable amount of roughage and a relatively small amount of grain, which is fed just before calving in the spring, it is readily seen that roughage and pasture are the chief factors that the farmer would take into consideration in maintaining a beef breeding herd.

The average calf crop for three years was 87.9 per cent of the number of cows. Out of 100 cows we secured a little over 87 calves each year. The pasture, roughage and grain required for maintenance of calves was charged entirely to the cow rather than the calf, so that the cost of maintaining the calf up until weaning time was estimated in the cost of the cow. The yearlings consumed each year an average of 2,444 pounds of roughage. During the same year they consumed an average of 286.2 pounds of grain, and they were on pasture six months of that time. The total cost of the feed of those yearlings, under the conditions under which this experiment was conducted, was $16.47 per head over and above their cost at weaning. The other figures represent the feed requirements for two-year-olds and three-year-olds.

These cattle were marketed in November, 1911, when market values were low as compared with today. The steer calves from the entire crop averaged $23.14 and the heifers brought $19.78, an average of $21.57 for the calves. In other words, it would cost $20.46 to produce the calf and the value was $21.57. That does not look like a very large margin, but this year—in fact, within the last week, I have bought a bunch of calves just about as well bred, which cost us delivered in our feed lots at Manhattan, $33 per head. The yearling steers were valued at $35.26 and the yearling heifers at $31.54. You will notice there is a difference in this case of only a little over $3.00 between the value of the steer and the heifer calves, of $4.00 between yearling steers and heifers and $8.00 between two-year-old steers and heifers. That means that it is more profitable for one who is going into the production of feeders to dispose of the heifers at an earlier age than steers unless they are to be retained for breeding purposes. There is very little difference in value as yearlings, but after they have passed the yearling stage we find that the differences become very great.

While the cost of the cattle in many instances does not look very large as compared with the cost of production, in the feeding of beef cattle or in the growing of beef cattle it is necessary that the man own the land, that he be just as good a farmer as the farmer that is growing grain, that he must make just as much out of his farming operations as the man who handles grain and sells it directly from the farm. All the value he gets over and above the value of the feed that he has put into his cattle just means that much additional profit during the year. That is, he has the same profit as the grain farmer and the additional profit from the handling of the cattle. He increases the fertility of the soil so that he can produce greater crops from year to year.

I have been out of college eight years—it will be eight years next June. I have done seven years of experimental feeding in Indiana, in Pennsylvania and in Kansas. During each of those eight years I have fed on an average of about 120 cattle and have kept a complete financial record of the cost of feeds and cattle during that time. In summing up the other day the average results of this work, I found that when we took the full value that the cattle feeder pays to the farmer for corn, its feeding value was 30 cents over and above the average market value of the corn at the time of feeding. In other words, this profit of 30 cents over and above the market value has been larger than the average profit of growing corn. This is one of the chief sources of profit in feeding cattle.

There are other factors that we may take into consideration in discussing this subject. Whenever the live stock industry has been eliminated from the agriculture of any community, we find a decadence not only in the farms themselves, but in the stock of the people of the country. We find that when the live stock is eliminated it means abandoned farms. We find it in the southern part of Europe; we find it in Russia, and we find it in this country in certain sections of the east and south. Whenever we find live stock kept up to its fullest possibile capacity, we find a greater yield of crops and we find better citizens on the farms. If for no other reason, that alone would justify us in making every possible effort to keep up the production of cattle. I believe that where animals are bred on the farm and developed on the farm, it gives to the boy a sense of responsibility, a sense of sympathy that he cannot get in any other manner.

In regard to the production of feeders, I will say that I have bought as good feeding cattle in Missouri as in any state in the Union. It is possible to feed and develop on your native blue grass pastures with grain and clover, alfalfa and cowpeas, cattle that are equal to those of any other section of the world. When you get into the production of feeders, then you will have different problems than in the feeding of cattle. Those of you who have bought cattle on the market and finished them out, often had to pay just as much attention to cattle of inferior quality as to the fancy individuals because they could be handled with equally as great profit. Whenever any community as a whole goes into the production of cattle for the feed lot, there will be found a better grade and better class of feeders than you can buy anywhere in the markets of the country. Whenever I buy good cattle, I find that I am buying from a man who is right up in the business, who knows the value of blood, who knows the value of cattle and who does not care to sell unless he thinks he is getting a little bit more than they are worth.

While this is not a talk on the handling of pure-bred cattle, I might say that during the last six months there has not been a week when a load of cattle fed in Missouri and shipped to the Kansas City or St. Louis markets has not sold for enough money to have enabled a man to take the actual cash that he got out of those cattle and invest it in pure-bred cows and thus improve his herd, so while we have discussed this from the standpoint of market cattle, it is possible for us to trade our good grade cattle for pure-bred cattle and thus build up the live stock industry in the State as a whole. But we will find that the most profitable line of live stock farming will be that which is well adapted to the farm upon which the cattle are produced. That is, the feeding and handling of beef cattle is largely an individual matter, and what one man can do on his farm is not necessarily the same that should be followed on the adjoining farm. Where he has an abundance of pasture, he can afford to let his feeders become a little older before selling for market. Where the land is of a different nature and capable of plowing, then it is best to feed out the calves as rapidly as possible.

I think I have taken all the time allotted to me, and I wish to sum it up in this manner: That the beef cattle-breeding business holds out a greater hope of profit in the future than in the past because of the fact that they must be produced on land of a commercial value. The free range is no longer even a dream. The place for cattle is to utilize those crops that grow on the farm, not only for the best crops, but for the crops that would otherwise be unprofitable. Success depends upon making good use of the by-products of the feed lot, the hogs, the manure, etc., and thus building up the farms, making better citizenship and better homes throughout the State. I thank you.

RAILROAD TRANSPORTATION OF LIVE STOCK.

(C. S. Jones, President Chicago Live Stock Exchange, Chicago, Ill.)

I assure you that I feel highly honored to be invited to address you on the question of railroad transportation of live stock. It is a very important question, not only to the cattle feeders and producers all over the country but to the commission men as well.

I come here with no "chip on my shoulder" to make a fight with the railroads. They are a very necessary evil; they have done more to develop the commerce, the agricultural interests and the live stock interests than any other agency and have probably contributed as much or more to the development of the western country than all other agencies combined. They have penetrated the western territory, they have tunneled and climbed over the Rocky mountains and it has cost a great many millions of dollars to do so, and they are entitled to a great amount of credit for the work that they have done.

C. S. Jones.

Under the magic touch of the great railroad wizards, the western country has been developed from a wild and barren waste to a grand producing country where farm lands, that a few years ago sold from ten to forty dollars per acre, are now worth anywhere from fifty to two hundred dollars per acre, but I do not wish to dwell too long in emphasizing their virtues and exploiting their achievements. The point that I desire to make is, are they giving the live stock industry the kind of service which it deserves and which it is entitled to?

Men who stand very high in railroad circles like Mr. Marvin Hewitt of the Chicago Northwestern Railroad, tell us that there is no money in handling live stock. Other railroad officials have made the same argument. If this argument is good, then I would like to have them explain to me why they send out traveling live stock agents broadcast all over the country to solicit the live stock trade. Furthermore, I should like to ask them to explain why they are running promotional trains and educational trains, employing college professors and eloquent orators, to accompany these trains advocating to the farmers that they should raise and feed more live stock. The railroad men tell us that they would prefer to haul grain to market instead of having it fed to live stock, but they must stop and consider that if there was no live stock fed in Illinois, Iowa, Missouri, Kansas and Nebraska that farm lands would deteriorate very fast and it would not be very long until the farmers could not raise very much grain for the railroads to haul, consequently it is absolutely necessary that in the great corn-raising states above mentioned that we must raise and feed live stock. The railroads have done a great deal to promote the raising and feeding of live stock, but now on account of the bad service which they are giving this traffic they are crippling the industry. In my opinion they are killing the goose that lays the golden egg.

Several years ago when the railroads were not as well equipped physically as they are at the present time to handle live stock on good fast time and get them in for the early morning market, they did much better in that respect than they are doing now. Today they have large engines capable of making fast time, they have double tracks, they are safeguarded by all the modern improvements which genius can invent, they have the Jenny couplers, they have the air brakes and in fact every modern invention to facilitate the traffic, but to counteract all of these modern appliances there is, in my opinion, one evil which offsets it, and that is the so-called tonnage system. Trains are held at junction points until they are able to make up a certain amount of tonnage. The engines are loaded down to their utmost capacity regardless of weather conditions or any other elements which may retard their speed. These exceedingly long trains are very difficult to handle. When they have to pull in on a sidetrack, perhaps to let a passenger train pass them, it is difficult for them to get in motion again. When they arrive at the Chicago terminals or at any of the other market terminals there is always a great deal of delay on account of the difficulty in handling these long trains. A 60-car train of live stock, when it is stopped, requires fifteen to twenty-five minutes before the engineer can exhaust the air of the air brakes in order to get started again. All of these little things tend to delay the traffic and get stockmen late for the market. Live stock is not only perishable property, but is shrinkable property. From the time that it leaves its home feed yards it begins to shrink and never ceases shrinking until it is in the slaughterer's pens. It is not only shrinking in weight, but is also shrinking in flesh, making it less desirable to the buyer and causing it to sell at a lower price. It is always very essential for live stock to arrive at the different markets for the early morning market; when it arrives late in the day it always means a loss to the owner, for the reason that the late market is nearly always lower than the early market.

Some time ago the railroads made a plea that they were entitled to a little increase in their freight rates on the ground that everything else, including labor and all kinds of supplies which the railroads are obliged to buy, had advanced in price very materially, while rates had not been advanced. I am not a railroad rate man and do not feel competent to pass on this question. The Interstate Commerce Commission took the matter up, investigated it very carefully and asked the railroad companies to produce their books for examination. After a thorough investigation by that very fair and capable body of government officials, they refused to allow the railroads to raise their rates and I presume they felt justified in their action, but the live stock shipper and producer had better grant the railroads a little higher rate, provided they could be guaranteed more prompt and better service.

I have had an idea that perhaps live stock rates should be based on a sliding schedule, one rate for first-class service and prompt delivery of live stock at the markets and a lower rate for delayed service. This may be only a dream of mine and possibly is not feasible or practical, but the Lake Shore and Michigan Southern Road, also the Pennsylvania Railroad contract to haul passengers from Chicago to New York in eighteen hours, but they charge an extra fare for doing so. If their train is late they are penalized and have to refund to the passenger a certain percentage of the fare that is charged. They will also agree to haul you on a much slower train at a much lower fare. Why not to this extent put live stock on the same parity with individuals. If the railroads, by their delayed service, are trying to force the live stock men into conceding a higher rate of freight, I think they are pursuing a bad policy. As I have said before, they go out and solicit the live stock trade and send out educational trains costing them thousands of dollars, advocating the increase in the production of live stock. The damage claims to the big trunk line railroads must necessarily amount to a vast amount of money in the course of a year, and it has always seemed to me that this could be eliminated by better and more prompt delivery of live stock at the different markets.

The shipping contract which the railroad obligates the shipper to sign is a jug-handled affair. A shipper is obligated to sign this contract, stipulating what the valuation of his live stock shall be regardless of whether they are worth ten dollars per head or one hundred and fifty dollars per head. The shipper is obliged to pay a certain rate of freight regardless of whether he gets first-class service or fourth-class service.

The people created the railroads, gave them their license to do business and I think that now it is our province to dictate to them what their treatment of us shall be. We are paying the freight, and they should give us a service in comparison with the money that we are paying them, but in a large percentage of cases we are not getting what we pay for. If live stock rates are too low and the railroads can show us that they are too low, let us advocate that they be allowed to make a reasonable increase, but in doing so let us ask and require of the railroads that they give us first-class service on our live stock. There is no way of estimating the loss which occurs to the live stock industry all over the country on account of the delay in the delivery of their stock to the markets. The loss in shrinkage, the arrival of stock on the late markets, the depreciation in prices, the bad condition of the live stock caused by the delay, costs the live stock industry of the country millions of dollars per year. You may ask me what my solution of the evil is and as I said before, while I am not a railroad man, but I would advocate that they either put live stock rates on a sliding schedule, paying one rate for first-class service and a lower rate where stock is delayed and does not get the first-class service, or else we will have to appeal to Congress to pass a law compelling live stock trains to make a certain number of miles per hour from their starting point until they reach the market.

With all the modern railroad facilities and improvements, I can see no reason why a train of live stock should not make fifteen to eighteen miles per hour. Still we have many trains arriving at the different markets that do not average half this speed. My opinion is that the tonnage evil of overloading the trains is largely the cause of it, and I think that an organization like yours could accomplish much if it would work in harmony with an organization like the Corn Belt Meat Producers' Association of Iowa, with headquarters at Des Moines, and The Military Tract Live Stock Shippers' Association of Illinois, with headquarters at Monmouth, and other kindred organizations, take up these matters, call a joint meeting, send a committee from each one of your organizations, and perhaps appeal to the different live stock exchanges at all the different markets. I cannot help but feel that a convention of this kind might accomplish a great amount of good.

Missouri State Board of Horticulture.

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SOME WORK OF THE YEAR 1912.

(Ashleigh P. Boles, Secretary.)

Ashleigh P. Boles.

The season of 1912 was, on the whole, a most profitable one to the fruit grower. Many orchards in the State, it is true, did not return a profitable yield; but they were in nearly every instance neglected orchards and not in the hands of growers who depended on them for a livelihood.

In apple growing the necessity of spraying was most forcibly demonstrated. In South Missouri few unsprayed orchards bore any merchantable apples, and sprayed orchards bore a maximum yield.

Nearly all districts adjacent to markets accessible to Missouri growers produced a maximum yield of apples, and in addition to this the western and northwestern growers shipped to these same markets several times as many apples as they had in any preceding year. It appears that these western growers did not consider local competition in placing their fruit, as they had depended in the past on the superior quality of their pack reaching a class of buyers quite inaccessible to the eastern pack. This hypothesis was not well founded. In the spring of 1913 it is found that fancy western fruit is being sold to a lower class trade in direct competition to eastern barrel pack. Their higher class market has been flooded and the overflow into the lower class market has brought down the price to that of eastern grown fruit. This has helped to demoralize the market for Missouri grown storage fruit, and has so reacted on western growers as to characterize their position in the market as a disastrous failure.

It would appear from the foregoing facts that production has exceeded the demand. This is not the case. Smaller cities and towns, upon whose supply the small apple buyer at picking time is largely dependent, have, except in few instances, not been glutted with apples, and the great farming population beyond the northern and southern limits of the habitat of the apple has not been supplied with one-half its maximum capacity for apples. These people are, in turn, dependent on the small town for their supply of fruit. The problem of placing the buyer, representing the small town market, in touch with the grower has been partially solved by the State Board of Horticulture, acting as a central agent in the distribution of information obtained by writing to grower and buyer, and preparing a list from the information thus obtained. These lists are prepared in this way: The growers whose names are on file in the office of the board are written to in August requesting their report of the size and quality of their crop, and are asked to name all their neighbors who could be induced to send the same information. A list is prepared when all of these reports are in, and buyers when writing to the board are referred to them as growers in the market with fruit to sell. The list of buyers is compiled in a smilar manner, and their names furnished the growers upon application. This service in 1912 placed growers in touch with more than 300 buyers, and resulted in satisfactory sales in nearly every instance. If the best interests of the fruit growers of Missouri in the matter of marketing their fruit is served by the State Board of Horticulture, it is imperative that this service be extended so as to be accessible to all growers of the State and to all buyers. In order that such service be established, a census must be obtained that will place in the hands of the State Board of Horticulture a complete list of orchards and data showing their conditions and the varieties of trees. When the effort was made to obtain the census by mail, it was found that (quoting from annual report, Dr. W. L. Howard, 1911) ". . . Although . . . we wrote to about eight thousand of these people at different times, and to many of them sent out a second and even a third letter . . . almost an even three thousand of these letters remained unanswered, and yet they were not returned to us, showing that they were taken from the office and read. We still have names of something over six thousand persons with whom we are negotiating. Not only have over twenty-five per cent of the people who are known to own orchards shown themselves utterly indifferent to supplying information, but a surprisingly large number have written us flatly declining to tell us anything about their orchards." This method of obtaining the census was abandoned after many months of futile endeavor to acquire effective data through correspondence. The State Board of Horticulture then secured an appropriation that would enable it to send out men to canvass the State, inspecting each individual orchard, taking careful notes as to the condition of the trees, the varieties of fruit, and the intention of the owner as to the management of the orchard. This work was inaugurated in 1912 and enough work done to prove the effectiveness and general advisability of the method.

This census may be ragarded as the most important work of the board to date. It will place on file in the office of the board information that will enable it to get in actual touch with practically all the fruit growers of the State. It will enable the board to compile reliable crop reports. The meaningless figures "50 per cent of the crop" can be supplemented by such practical data as amount of blossoming, character and extent of spraying, frost damage, so-called "June-drop," drouth damage, and the preharvest damage from wind, bitter rot, codling moth, etc. As these details will be secured directly from each grower from each district in the State, it can be readily seen that a correct crop report can be compiled and distributed at any time in the growing season. This will do away largely with the buyer stampeding the grower into selling at a low figure by gross exaggeration of the size of the crop. It will also help the buyer, in that it will enable him to buy at a reasonable marginal profit. He will not be forced to buy at an excessively low figure in order to avoid the possibility of failure occasioned by an overstocked market, thereby decreasing the market price.

National associations have been unable, in the past, to give correct estimates of the Missouri crop, thus hampering the work of national distribution of crop reports.

The board will be placed in personal touch with the fruit growers of the State and will be better able to shape its policy of service in the work of disseminating instructive literature, conducting educational institutes, etc.

The mailing list of the State Board of Horticulture at present has less than one-fifth of the names of the fruit growers of the State. And it is here to be noted that these growers must be informed as to the work of the State Board by the State Board itself before the fruit grower will take advantage of its service. As it is necessary for the State board to take the initiative in extending its services to the growers of the State, it will be seen that this complete and thorough orchard census, which will place the name of every fruit grower of the State on file in the State Board's office, is essential to the most efficient application of the board's service. Such has been the difficulty in getting fruit growers in touch with the State Board that less than one-half of the people who have asked that their names be placed on the mailing list are fruit growers.

Some of the advantages available to the growers on this list follow: Advice as to crop condition, direct information as to whether or not the apple buyer's price is too low, just what price to expect for their fruit, quality of course considered, instruction on spraying, cultivation, pruning, planting, frost prevention, harvesting, marketing—every phase of fruit culture—instruction in bulletin form of the latest data, or personal advice from the men engaged in the work of the Missouri fruit experimental station.

Built, as it is, at great expense it may be readily seen that any work that will increase the number of people to whom this service is accessible is of greatest importance. Add to this the gain in efficiency of the service, and some idea may be had of the importance of this orchard census.

Circular letters were sent out in 1912 as follows: A monthly report of the condition of the growers' fruit crop as obtained from these orchard owners, whose names are on the mailing list; a letter advertising the State Fair, and announcing the addition of $400 to duplicate the premiums offered by the State Fair Board; a letter announcing the fruit judging contest, in which scholarships of $50, $25, $20, $15 and $10 in a short course of the University of Missouri were offered to boys between the ages of 16 and 20 years, who had not been employed in fruit experimental stations nor had attended agricultural colleges; a letter showing the average price obtained for apples in 1911, also that the average price for sprayed fruit was 12.4 cents per bushel higher than for unsprayed fruit, and that the yield was two or three bushels larger on sprayed trees than on unsprayed trees. In the marketing season a circular, "Marketing the Apple Crop," was sent out. This was followed by a circular letter telling the growers of the necessity of writing to buyers to ascertain market value of fruit, so that a fair price would be recognized when a sale was made. It was also urged that growers take the initiative in securing buyers, as the crop was unusually large. In addition to these special bulletins, there were sent out from this office approximately 4,470 letters, 4,632 new bulletins, 9,146 old bulletins, 1,250 new reports, 642 old reports, and 5,028 letters written.

These figures do not include the reports sent out by express to the general mailing list or handed out from the office, but only special requests received by mail.

THE ECONOMICAL VALUE OF BIRDS IN HORTICULTURE.

The State Board of Horticulture, in a series of newspaper articles and through interest aroused in meetings, endeavored to call attention to the necessity of fruit growers supporting the McLean bill, which provides Federal protection for migratory birds. The paper read by Mr. Pellett of Iowa before the growers at Columbia during Farmers' Week is a forceful one on this subject.

"The Economical Value of Birds in Horticulture." This quotation from "Fifty Common Birds of the Farm and Orchard," United States Department of Agriculture, bulletin No. 513, may serve to introduce to us the importance of bird life on the farm—"and indeed it is believed that without the aid of our feathered friends, successful agriculture would be impossible."

The estimated damage from insects and rodents is 10 per cent of the value of farm crops. We find that 5 per cent of the total of insect life is responsible for this damage, and that this 5 per cent has become destructive almost wholly because of the removal of their natural enemies and their natural food plants.

This problem of the decrease in the number of birds and increase in the number of insects and rodents may be stated in this way: We find in nature an equation where one species, by virtue of its destructive power, prevents the overproduction of another, and it may be readily seen that man, in his advance towards civilization, has introduced an artificial factor that has unbalanced this equation. This factor comprehends the reduction of a number of one agent of destruction and of noninterference with another; the encroachment of intensive cultivation of forests and other areas used as breeding grounds, and the many other changes induced by man's dominating influence in the animal kingdom.

What is being done to offset this factor? The following paper by Mr. Pellett, delivered at the meeting of the State Horticultural Society during Farmers' Week, 1913, at Columbia, Missouri, gives a clear exposition of this problem.

FRIENDS AND FOES OF THE FRUIT GROWER.

(Frank C. Pellett, Atlantic, Iowa. Photos, mostly from life, are by the author.)

Frank C. Pellett.

Scientists estimate that insects are responsible for an annual tax on agricultural products equal to ten per cent of the total production, including lumber. This means that all farm products, such as meat products, dairy, fruit, grains, hay, cotton, vegetables and all the rest including lumber, as above stated, on an average must pay a tribute to insects of at least ten per cent. What is lacking in one is made up in another. For instance, fruits of all kinds are especially liable to injury from insects and the damage to them is much above the average.

Notwithstanding this heavy tax, it is said that less than five per cent of insects are injurious. Ninety-five per cent are either harmless or really beneficial. Again it is said that the five per cent that levy the ten per cent tax on agriculture have become injurious from two causes: the destruction of their natural enemies or the removal of their food plants. The causes that have led to this great tax on farm products are still in operation, and unless checked, will in time lead to much heavier demands. It is estimated by some authorities that seventy-five per cent of our bird life has been destroyed. This is at best a guess, but every observer knows that song birds are becoming less numerous every year and that destructive insects are becoming more numerous.

But insects are not alone in levying a tax on agriculture. Such rodents as rats, mice and gophers also exact a tribute, and although the total is not as large as is exacted by our insect enemies, it amounts, on the whole, to millions of dollars every year. These also increase and become troublesome as a direct result of the destruction of their natural enemies. To begin with, the various species of animal life were well balanced and one species prevented the overproduction of another. When man interfered and removed one, those which had furnished it with food immediately became more numerous and in many cases have caused untold injury. The introduction of any old world animal, bird or insect is likely to be attended with serious consequences because their natural enemies are seldom brought also.

Birds play an important part in reducing the number of weed seeds as well as noxious insects, and such animal pests as mice, rats, moles, etc. The part played by certain small animals, such as weasels and skunks, is also worthy of some attention. As a naturalist, the writer has occupied much time in the study of economic aspects of animal and bird life. Hawks have been watched for weeks to ascertain on what they were feeding; skunks and weasels have been encouraged to live about the place that they might be observed also. Some of these observations are recorded in this paper.

Most insects pass through four different stages during life. The first stage is that of the egg, the second stage the larvae or worm stage. It is in this stage that most of the growth is made. The little larvae is very minute when first hatched, but grows very rapidly and moults or sheds its skin frequently until it completes its growth. A remarkable change now takes place. The insect becomes quiet and becomes encased, as a rule, in a sort of casket. No food is taken and it is helpless to move about. This third stage is called the pupa. Many of the moths pass this stage within a silken cocoon, and later emerge as mature insects.

There are exceptions to this four stage life history, however. Moths, butterflies, bees, beetles and many others pass through the four stages which are known as the complete metamorphosis. Grasshoppers, crickets and cockroaches hatch from the eggs in the same form as the adults, and are known as nymphs. They continue to moult frequently until they complete their growth, but at no time differ much in appearance from the mature insects. The dragon flies have only three stages, the second or larval stage being spent in the water. When the growth is completed, the youngster crawls up the stem of some convenient plant and simply unbuttons his coat in the back, so to speak, and crawls out of the old nymph-skin with a marvelous pair of wings.

The minute plant lice or aphides are strangest of all in their life histories. The first generation to appear in spring hatch from eggs and all are females. These give birth to living young. Several successive generations of living young are thus produced until late in the season, when males also appear and eggs are laid from which shall appear the generation of the coming year.

STAGE OF INJURY.

Most insects are injurious in the larval stage. Cutworms, which are very injurious as caterpillars, are harmless as moths. There are exceptions to this rule, of course. Mosquitoes are troublesome only as adults. Few insects are injurious in more than one stage. A very few are beneficial in one stage and injurious in another. An example of this class may be mentioned, the blister beetles. In the larval stage they are beneficial by destroying eggs of other insects, such as the grasshoppers. In the adult stage they sometimes become so abundant as to be injurious to crops, notably potatoes and alfalfa.

Birds play an important part in destroying many harmful insects, especially in the larval stage, although they also take many of the adults.

THE SEED EATERS,

The boy who has to pull weeds from the garden when he would like to go fishing, should be the last to persecute the sober-colored little field sparrows which live almost wholly on weed seeds. There are several different kinds of native American sparrows that thus render invaluable services. They should

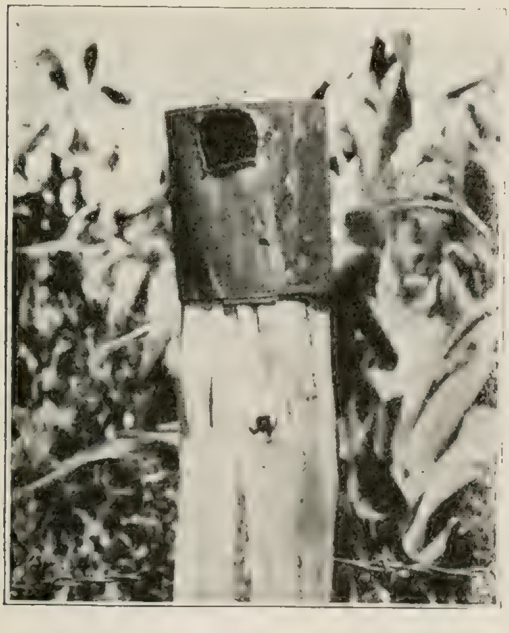


Fig. 1. Tomato can for Bluebirds and Wrens.

not be confused with the English sparrow. The English sparrow was first introduced into this country from Europe and has since spread nearly all over the country. This bird has some redeeming qualities, for it does destroy a few grasshoppers and other insects and eat some weed seed. On the whole, however, it is a serious pest and should be destroyed. Its food for the most part consists of grain. The most serious charge against it is the fact that it unmercifully persecutes our native birds, especially wrens and bluebirds. It will repeatedly destroy their eggs or young and drive them from their nests, unless they be protected. The English sparrow also frequently destroys the eggs and young of robins, and other birds nesting about the yard or orchard, and has been an important factor in reducing the number of native birds to the present low mark. The English sparrow should be driven from the premises and the native birds encouraged. Bluebirds had been entirely driven from our neighborhood for several years, when we began to put up tomato cans especially for them to nest in. The sparrows we destroyed, and the bluebirds shortly returned to their old haunts. Two families were reared in one of these cans the same year. We have several of them with a hole just the right size for the bluebird, placed in suitable situations. Figure 1. Those on top of the fence posts about the barn lot seem to be favorites. Wrens also have been pleased with these cans and we have thus increased the number of wrens considerably. Some seasons we have perhaps a dozen families of them, since the English sparrows have been driven out.

The native American sparrows have no such bad habits. They live on good terms with their neighbors and in their habits are above reproach. In summer the field sparrow, song sparrow, and lark sparrow are among the best known. In winter the tree sparrow and junco, sometimes called snowbird, may be seen in large numbers scratching among the weeds in the fence rows for seeds. The white-throated sparrow and white-crowned sparrow, and some others are seen only during the spring and fall migration. All are beneficial.

THE BLUE JAY.

This is one of the few native birds with questionable habits. After studying them very carefully, I have reached the conclusion that, excepting an occasional individual, the blue jay should be protected. I once knew one that visited a hen's nest every day to eat the egg. I also knew of one case where a blue jay killed a very young chicken. Such incidents I believe to be rare. More frequently they form the habit of pilfering other birds' nests, but I very much doubt whether such habits are nearly as common as they are believed to be. Few persons realize that it is possible for a bird or animal to form bad habits as readily as for a boy or man to do so. In my opinion such habits are acquired and, of course, frequently learned from one another. When a jay takes to robbing nests and our attention is attracted to the incident, it makes a strong impression upon our minds. Seldom, however, do we take the necessary time to carefully watch other birds of the same species and give them an opportunity to prove their innocence of the same crime. While I have known jays to pilfer as above stated, I have also known them to live on perfectly good terms with other birds, nesting in the same grove and even in the same tree. It is one of the very few birds fond of the hairy caterpillars, such as the tent caterpillar.

THE CROW.

The crow is another much abused bird. Being very intelligent, it learns bad habits all the more easily. They are charged with all kinds of bad habits, from eating eggs and young chickens to pulling up corn. Personally, I have had them eat my turkey eggs from pure-bred stock, when each egg was worth twenty-five cents. I have also had them take the young chickens. I have given special study to this bird for a number of years and feel very certain that such habits are not very general among them. In one instance crows were very numerous about our premises and about our neighbors also. We suffered great annoyance from the constant loss of young chickens by an old black rascal who conferred similar attention to our neighbors. One day he was killed in the act, and thereafter, although the rest of the flock continued to come about as freely as before, they gave us no further trouble. I was thus satisfied that the one crow was the only one in the flock that killed young chickens.

A similar instance came to my attention not long since, of a man who lived in a neighborhood where crows, though abundant, were never troublesome. One spring he had a lot of incubator chickens, and losing a number instead of burying them, as he should have done, he threw them out where the crows could readily get them. He thus taught the crows the habit of eating the young chickens, and was soon troubled so badly that he had great difficulty in raising chickens. In this case the trouble was brought about by his own carelessness.

Crows are very fond of June beetles and white grubs, also of young field mice, and crows following the plow in the field are a familiar sight to everyone.

Those who have investigated the matter, make the claim that a considerable part of the sprouting grain pulled up has been found to be kernels on which worms were feeding, the crows apparently being as much in search of the worms as of the grain.

From my own observation I would advise the destruction of an individual which was known to have formed pilfering habits, but to protect the species as a whole. In some localities where crows have been greatly reduced in numbers, field mice have become so abundant as greatly to injure the crops. As before stated, the destruction of any one species of animal life results in the corresponding increase of some other, usually more injurious than the first.

THE COOPER HAWK.

(For detailed account of observation, see Forest and Stream, October 14, 1911.)

Having spent weeks of time in shadowing families of hawks, I feel very sure of my ground in discussing them. The Cooper hawk, figure 2, feeds almost entirely on poultry and birds according to my observation. It is very shy and difficult to kill. During the weeks of my observation, the only small animals known to be eaten were a few prairie squirrels about the time the grain and meadows were cut, when they became an especially easy prey. A pair of these birds are a serious menace to the poultry of any neighborhood.

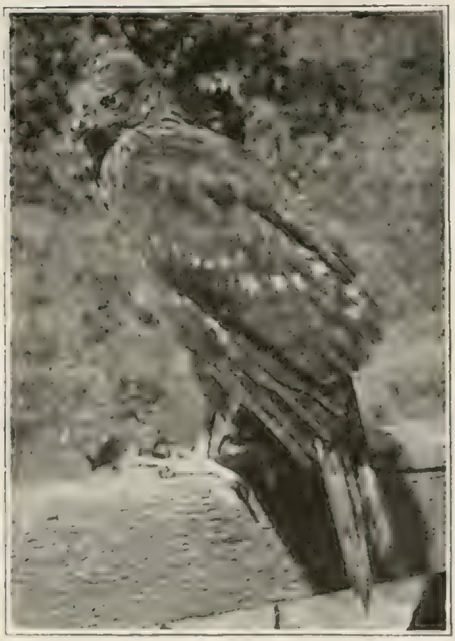


Fig. 2. The Cooper Hawk.

THE SHARPSHIN HAWK.

The Sharpshin is very much like the Cooper hawk in appearance but of much smaller size. Its food habits are very similar, birds and young poultry composing the greater part of its food.

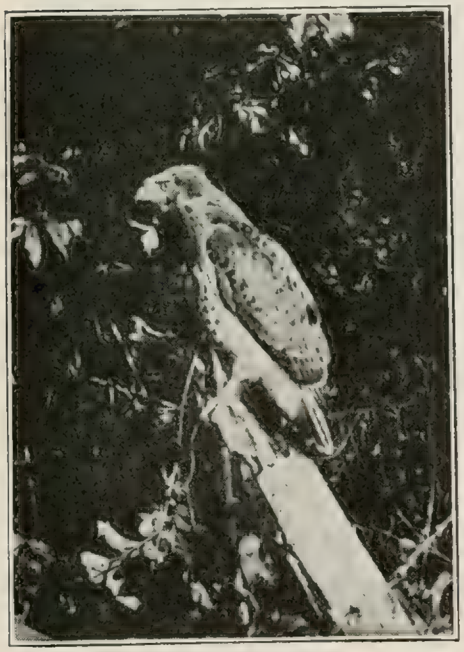
THE SPARROW HAWK.

This little hawk is the smallest of our birds of prey. It is of a trusting nature and easily approached. As a result it very frequently falls before the hunter's gun. A pair of them reared their family in our front yard where we had an especially good opportunity to observe them. The hens with small chickens moved about freely, but the hawks caught their prey from the neighboring fields. Grasshoppers and crickets composed a large part of the food. A considerable number of mice and an occasional striped ground squirrel was also taken. A few small birds were caught during the summer, but most of them were English sparrows. On the whole this is a very valuable little bird and should be protected.

THE RED-TAILED HAWK.

(For detailed account of observation, see Forest and Stream, June 18, 1910.)

This big fellow goes commonly by the name of chicken hawk, although he is suffering for the sins of the Cooper hawk. From March to June the family of Red-tailed hawks under observation were only known to have two small chickens. On the other hand they had as high as three pocket gophers, two field mice and a prairie gray squirrel in one day. I estimated that this pair of birds were worth at least fifty dollars to the community in destroying such pests as gophers, mice, rats, moles, ground squirrels, etc., based on the fact that the county was at that time paying a bounty of ten cents per head for the destruction of gophers.



Red-tailed Hawk.

THE SCREECH OWL.

(See Nature and Culture, October, 1912.)

For years screech owls have lived about our buildings and we have become well acquainted. One became so tame that he would permit me to come very close to him as he sat in the barn window or on the fence at nightfall. The food of these little birds consists, for the greater part, of mice and insects. I have never caught them in any mischief. The owls catch their prey at night when the poultry is on the roost and when rabbits, mice and insects are active. If the poultry is properly housed, there is no excuse for anyone to complain of trouble from even the big horned owl, the only one against which any complaint can properly be lodged. All the other species should be protected. The screech owl is a surprisingly good mouser, and I had rather have a pair of them in my barn than half a dozen cats.

The Screech Owl.

With very few exceptions the birds of prey are friends of the farmer and should be protected. Boys should early learn to distinguish the Sharpshin and Cooper hawks, the two species which are responsible for most of the prejudices against the whole family of hawks and owls, from the other species which are beneficial. Much educational work is needed along this line.

THE SONG BIRD.

We come now to a class of birds better known and, with few exceptions, loved and protected by the fruit grower. The writer has a wide acquaintance among fruit growers of several states, and does not now recall a wide-awake, well-informed individual among them who is not a friend of the birds. The man is shortsighted, indeed, who will permit the destruction of such birds as robins, catbirds, thrushes, etc., because they take a few cherries or berries. Such a man must forget that he has to pay the hired man besides boarding him. There is no longer any question but that all three of the birds named above are of far more value than injury, and every possible means should be used to encourage them to nest about the orchard. I have seen catbirds carrying away berries from my garden, and by watching them soon observed that they were also taking cabbage worms to feed the young in the nest nearby. Since the Russian mulberries, planted for their benefit, came into bearing, they have taken but few berries. (See Nature and Culture, October, 1912. Pro. Ia. Acad. Sci., 1912.)

THE CUCKOO.

There are two species of cuckoos common about our orchards, the yellow-billed and black-billed cuckoos. They are commonly called raincrows and are rather shy in their habits. The one shown in the picture on the boy's hand did not seem to be in good health. While I have found it possible to cultivate intimate friendship with many birds, never so far have I been able to gain the confidence of a yellow-billed cuckoo, excepting the one shown in the photo. These birds are fond of hairy caterpillars, and assist the blue jay in ridding the orchard of such pests. One specimen is reported from Washington as having eaten 217 fall web worms at one meal. Another had eaten 250 tent caterpillars. It is a well-known fact that these birds live very largely on caterpillars, such as cankerworms and others injurious in the orchard. The two species of cuckoos are very similar in appearance.

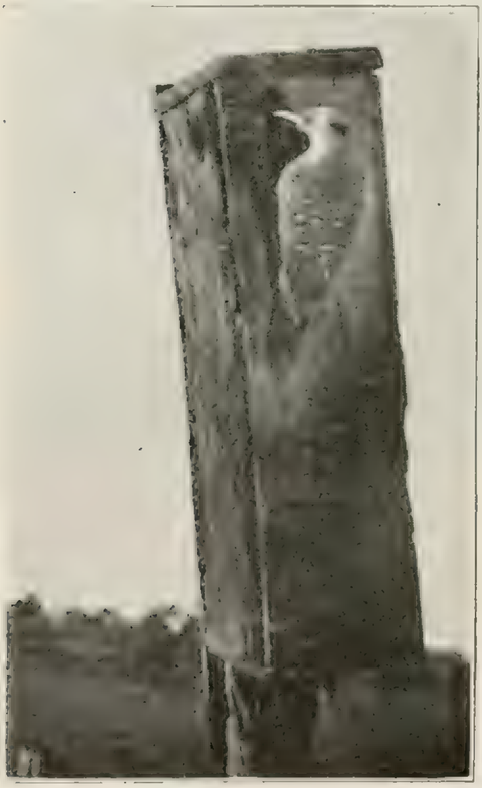
The Yellow-billed Cuckoo.

THE WOODPECKERS.

There are four species of woodpeckers common in Missouri. Others are occasionally seen, but aside from the four, none are numerous enough to be of much economic importance. The downy woodpecker and hairy woodpecker are both small in size and black and white in color. They are sometimes confused with the sapsucker. The sapsucker, however, can be identified by his yellow belly, which the others lack. The hairy and downy woodpeckers are both beneficial species, destroying large numbers of plant lice, ants and borers. The woodpecker's bill is well adapted to digging out the borers and the barbed tongue enables them to pull them from the holes, once they are exposed. These little woodpeckers also eat a large number of caterpillars, as well as insect eggs in winter.

THE FLICKER.

The flicker, also known as the yellow-hammer or golden-winged woodpecker, is a common bird about the farms, especially those situated in or near timber. These birds are valuable to the fruit man, not only because they are destructive to borers, but they also eat ants literally by thousands. They occasionally do considerable injury to telephone poles, the buzzing of the wires seeming to give the impression that borers are at work within the pole. These birds, in common with the others of the woodpecker family, supply no nesting material. They are content to excavate a deep cavity in some decaying tree trunk and place their eggs on the chips left in the bottom of the hole. It is often desirable to attract them to localities where no suitable nesting sites are available. The writer has given much attention to attracting such birds, and after several unsuccessful experiments a plan was hit upon which entirely meets their needs. From ordinary rough lumber a box was made about six inches square and two feet deep, very much resembling a box rabbit trap. The top and bottom are closed and a suitable entrance hole made near the top. About six or eight inches of ground cork, such as may be obtained at any fruit store, is placed in the bottom of the box to supply the place of a nest. The picture shows the result. Flickers have used



The Flicker at nest box.

these boxes on our grounds for three successive years past and reared their families therein. Red-headed woodpeckers and sparrow hawks, neither of which supplies any nesting material, have also utilized these boxes with apparent satisfaction. Sometimes the red-heads and flickers contest very vigorously for the possession of these desirable nesting places. In order to please the birds, we find it necessary to place them on top of a pole about twelve to fifteen feet from the ground and in the edge of the grove, or nail them to the side of a tree well up toward the top of the main body. Boxes half way up a tree, or on poles far from other trees, do not seem to suit them.

THE ORIOLES.

The orioles with their bright colors and high hanging nests are very attractive birds about a homestead. They destroy large numbers of injurious caterpillars and other insects. On one occasion I knew a pair of Baltimore orioles, together with wrens and golden warblers, to rid a plum tree of plant lice after it was so badly infested that it was apparently doomed.

THE MOURNING DOVE.

The mourning dove or turtledove is being very rapidly reduced in numbers and if the present rate of decrease continues, will shortly follow the passenger pigeon to oblivion. While it does not eat insects, its habits are absolutely above reproach and it renders much service in destroying weed seeds. It is unfortunate that in some sections it is regarded as a game bird; this fact, together with the slow rate of increase, renders it exceedingly liable to extermination.

THE GAME BIRD.

The prairie hen is now so seldom met with in Missouri that no hope is entertained that it will become re-established unless it can be domesticated. While in days gone by this bird played an important part in reducing the numbers of grasshoppers and other insects, as well as weed seed, it can no longer be said to be of any economic importance because of the small number still found within the State.

It is exceedingly unfortunate that the bobwhite or quail, figure 8, should ever have been considered a game bird. It is of a confiding nature, and where not persecuted will soon come about the barn lot and feed with the poultry. A short time since a flock of these birds frequented our garden and lawn. The call of "bob-white" would greet us at the break of day, and the birds would whistle from the garden fence or the top of the hencoop at all hours of the day. We came to feel a great affection for the busy little fellows, so that it was a great personal loss when they fell before some hunter's gun or met some other untimely end and returned no more. These semi-domesticated quail have little chance of escape from the gunner, as they have learned to trust mankind and have lost the sense of fear.

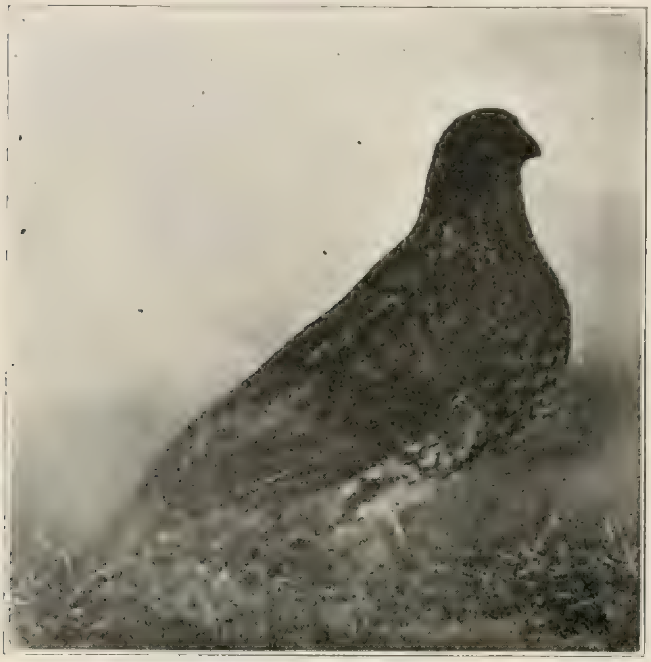


Fig. 8. Bobwhite.

A quail will eat from 500 to 1,000 weed seed in the course of a few hours. It is difficult to estimate what a service a flock of the useful little friends will perform during a summer on the ordinary farm. Besides weed seeds, they are known to eat Colorado potato beetles, striped squash beetles, boll weevils, chinch bugs, grasshoppers, cutworms and many other injurious insects. A pair of quail are worth at least five dollars to a farmer as destroyers of insects and weed seeds. The dead bodies are worth perhaps fifty or seventy-five cents for food. Personally I had as soon a gunner would shoot my poultry as to shoot quail on my premises.

The number of these birds has been decreasing very rapidly of late, especially within the past two years. Unless landowners take the matter in hand and prohibit shooting on their premises, we can look for no other end than the ultimate extermination of the bobwhite, which is one of the finest birds still fairly plentiful in most sections of the middle west. It is hard to understand why farmers, who would resent any attack on their poultry yards, will permit strangers to kill the last quail on the place and to shoot every other wild bird as well. Too many buy guns, also, for their own boys to aid in the destruction.

THE POCKET GOPHER.

In Northwestern Missouri the pocket gopher is especially abundant, while in some sections of the State it is entirely absent. It is especially annoying in hayfields, where the piles of earth thrown up seriously interfere with the mowing machinery. They also do serious injury in the orchard by cutting off the roots of trees, and sometimes a good many trees are killed in this manner. They may be easily trapped by setting a steel trap in the forks of their runways, or by dropping poisoned potatoes into the hole. I have found that, in addition to the red-tailed hawks before mentioned, weasels and the little spotted skunks, commonly called civets, are very destructive to these animals. In Iowa the bounty system has been in force for some time. Although I have noticed accounts of as high as three hundred dollars being paid out by a single county in ten days, the bounty does not seem to be an effective method of ridding the country of gophers. Where they become so abundant as to make it necessary, the landowner will begin a campaign that will be effective for a short time and then relax his vigilance. From careful consideration of the subject, I have reached the conclusion that a permanent bounty is a useless drain on the public treasury. It may be advisable to offer a liberal bounty for a short period of time, but when a permanent bounty is in effect, the rate is always so low that few find it profitable to hunt or trap the animals for the bounty alone. Those who will kill them anyway, get a little easy money from the public treasury without rendering any equivalent. In the case of the gopher, the encouragement of their natural enemies will be much more effective, and the poultry destroyed by the hawks, skunks and weasels all put together will not amount to anywhere near the amount now paid out in bounties.

Bull snakes are also said to be effective destroyers of both pocket gophers and field mice.

FIELD MICE OR MOLES.

The bobtailed field mice or meadow mice are a source of serious injury to the orchardist. David E. Lantz, in a bulletin issued by the United States Department of Agriculture, makes the statement that the aggregate loss to the farmers of this country from this source averages not less than three million dollars annually, and in some seasons is much greater. In parts of the Old World they have become so abundant as to seriously cripple the agriculture of many sections, and in restricted areas of our own country similar conditions are occasionally reported. From the above-mentioned bulletin I quote as follows:

> In summer the principal food of these mice is green vegetables and unripe seeds of grain and grasses. As the season advances, ripe grain and seeds take the place of the immature; and in winter bulbous and other roots are in part substituted for stems and leaves. When convenient, and green vegetation is lacking, the bark of shrubs and trees becomes a staple food. It is mainly in winter that apple orchards and young forest trees suffer from attacks of mice. It is generally supposed that such attacks are due to the absence of ordinary food; but this is not always the case, for depredations often occur during mild, open winters when food abounds. Instances also of summer girdling of trees are well attested.
>
> The common meadow mouse of the United States is one of the most prolific of our species. Estimating the normal increase at six young, with four litters in a season, and assuming that there were no checks upon the increase, the results would be appalling. A single pair and their progeny in five seasons would amount to nearly 1,000,000 individuals.

This little rascal is responsible for much of the mischief that is charged to the blind mole. The field mouse often lives in the runways made by the mole and carries in grains, etc., that lead to a false impression concerning the mole.

The bulletin above quoted strongly advocates the encouragement of hawks, owls, weasels, skunks, etc., for the purpose of keeping these pests in check. The time will shortly come when we will find it cheaper to protect poultry from injury by vermin-proof pens, than to fight such pests as field mice and gophers, as a result of our wholesale destruction of their natural enemies. It is possible to save young fruit trees from injury by properly prepared wrappers forced well into the ground. Old trees too large for wrappers, however, frequently are girdled by field mice.

SUGGESTIONS FROM GOVERNMENT BULLETIN ON BIRDS.

The following, from "Fifty Common Birds of Farm and Orchard," Farmer's Bulletin No. 513, prepared by the Bureau of Biological Survey, Henry W. Henshaw, Chief United States Department of Agriculture, offers some practical information on bird protection:

"A knowledge of his bird friends and enemies is important to the farmer and orchardist in order that he may protect the kinds that earn protection by their services, and may drive away or destroy the others. At the present time, many kinds of useful birds need direct intervention in their behalf as never before. The number of insect pests, on the other hand, is all the time increasing by leaps and bounds through importations from abroad and by migration from adjoining territories. Every effort, therefore, should be made to augment the number of our useful birds by protecting them from their enemies, by providing nesting facilities, and by furnishing them food in times of stress, especially in winter.

"Important in this connection is the planting near the house and even in out-of-the-way places on the farm of various berry-bearing shrubs, many of which are ornamental, which will supply food when snow is on the ground. Other species which are not berry eaters, like the woodpeckers, nuthatches, creepers and chickadees, can be made winter residents of many farms, even in the north, by putting out at convenient places a supply of suet, of which they and many other birds are very fond, even in summer. Hedges and thickets about the farm are important to furnish nesting sites and shelter both from the elements and the numerous enemies of birds.

"Few are aware of the difficulty often experienced by birds in obtaining water for drinking and bathing, and a constant supply of water near the farmhouse will materially aid in attracting birds to the neighborhood and in keeping them there, at least till the time of migration. Shallow trays of wood or metal admirably serve the purpose, especially as birds delight to bathe in them.

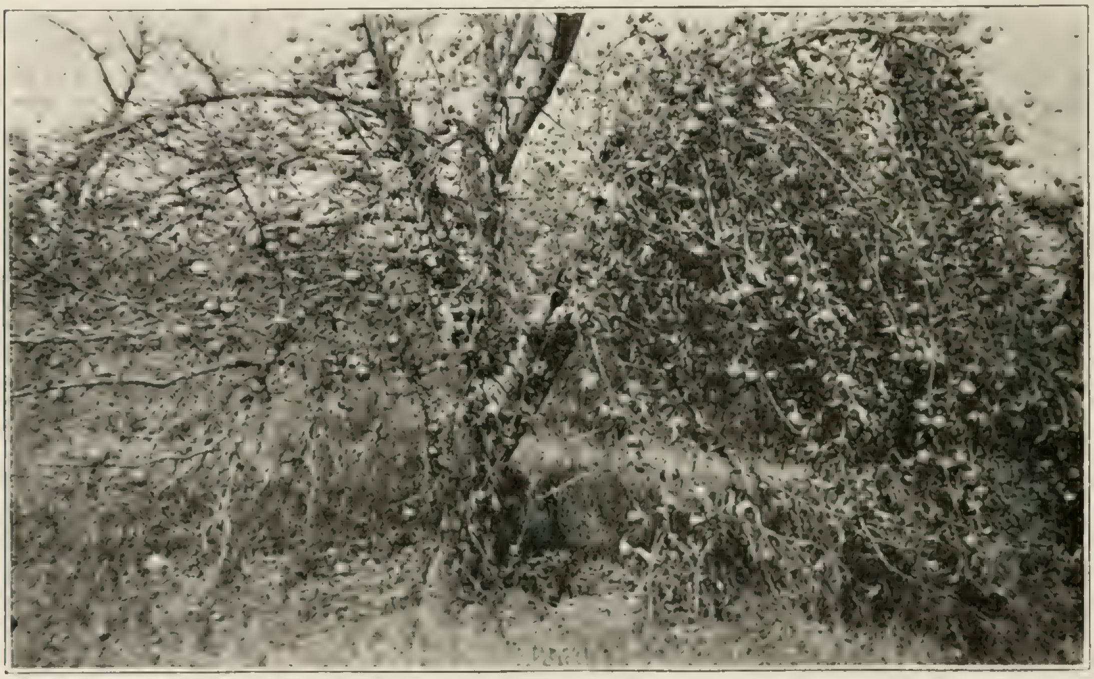
"Considerable success has been met with in Germany and elsewhere in Europe by supplying artificial nest boxes for birds, and the same method of increasing the number of birds and attracting them to farms and orchards where their services are most needed should be extensively employed in this country. The experiment can the more easily be tried since several firms in the United States are now prepared to make and deliver boxes specially designed for martins, swallows, bluebirds, wrens woodpeckers and other species. The average farmer's boy, however, if provided with a few tools, is quite equal to the task of making acceptable boxes for the commoner species, which are far from fastidious as to the appearance of the box intended for their occupancy.

"One of the worst foes of our native birds is the house cat, and probably none of our native wild animals destroy as many birds on the farm, particularly fledglings, as cats. The household cat is by no means blameless in this respect, for the bird-hunting instinct is strong even in the best-fed tabby; but much of the loss of our feathered life is attributed to the half-starved stray, which in summer is as much at home in the groves and fields as the birds themselves. Forced to forage for their own livelihood, these animals, which are almost as wild as their ancestral wildcat, inflict an appalling loss on our feathered allies and even on the smaller game birds like the woodcock and bobwhite. If cats are to find place in the farmer's household, every effort should be made by carefully watching and feeding them to insure the safety of the birds. The cat without a home should be mercifully put out of the way."

COMMON ORCHARD TROUBLES, SPRAY MIXTURES AND SPRAY CALENDAR.

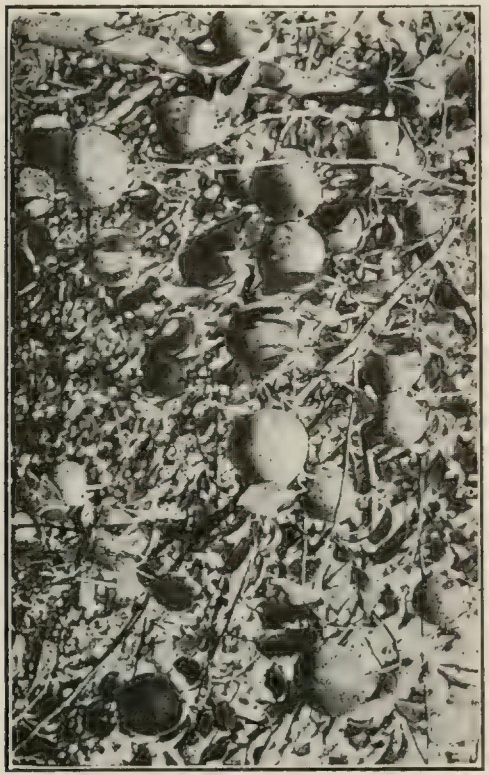
(From Missouri Fruit Experiment Station Bulletin No. 23, by F. W. Faurot, Mountain Grove, Mo.)

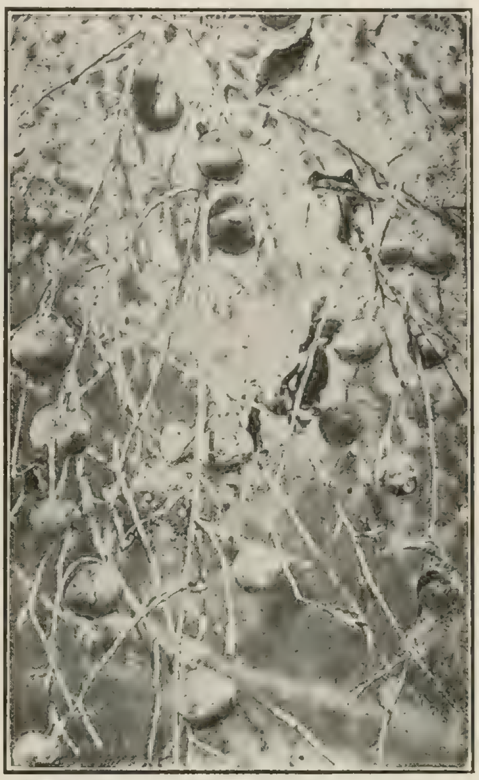
On account of the varying susceptibility of different varieties to different diseases and the varying importance of given troubles in different localities together with the varying influence of different seasons on the occurrence of any or all diseases, it is difficult to recommend definite methods of treatment precisely applicable to all orchards in all localities. It is only possible to suggest those measures of treatment most likely to succeed under certain conditions. Definite recommendations can be made, however, for any particular disease or pest, should it occur.



Apple tree, one side sprayed, the other side not sprayed. Notice difference in fruit and foliage.

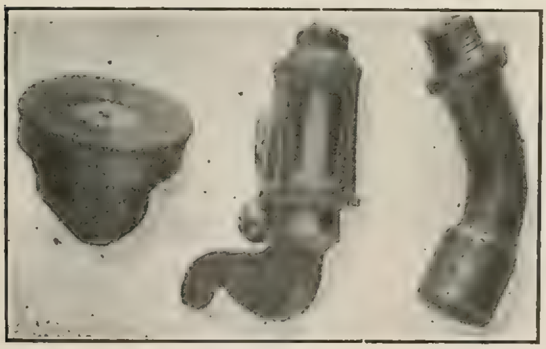
Timeliness and thoroughness are the essentials of succesful and profitable spraying. It is only by the industrious application of these principles that a satisfactory amount of clean fruit can be matured. What is most needed to raise the standard of efficiency of spraying in Missouri is more spraying machines, more dilute spray mixtures and more of them, and more time spent with each tree. The difference in efficiency between careful and timely work and careless and indifferent work, or no work at all, in spraying is indicated by the difference in the market value of cider stock and high-grade packing stock.


Fruit on a sprayed apple tree.


Fruit on an unsprayed apple tree.

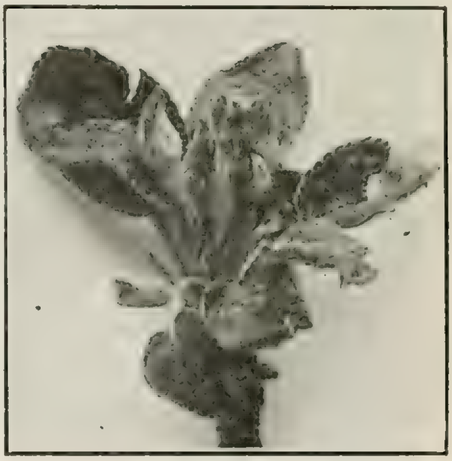
APPARATUS.

The spraying equipment should be consistent with the size of the orchard and whether it consists of a hand pump or a power machine, all working parts that come in contact with the spray mixture, such as the pump plunger, pump packing, pump valves and cut-offs should be kept clean and occasionally oiled to prevent corroding from the liquid and thus interfering with their operation. Leaks should not be tolerated in any part of the equipment. If a power machine is used it should be supplied with two sets of nozzles; one set of the Bordeaux type, the other set of the disc type. Bordeaux nozzles, which make a coarse spray, are of value chiefly in making the first spraying for codling


Disc nozzle, Bordeaux nozzle, nozzle angle.

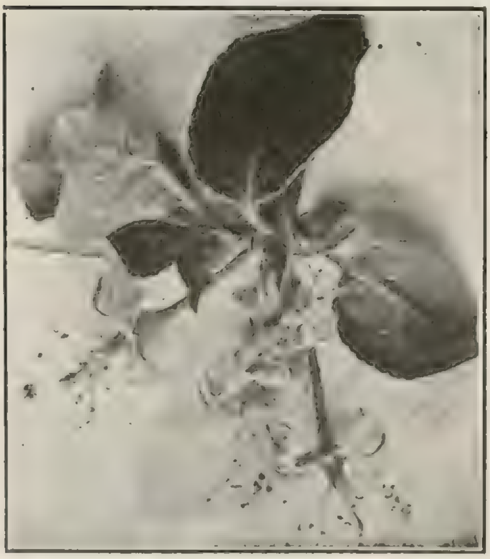
moth. The disc nozzles, which make a fine mist, should be used for all other spraying if conditions permit. A great many experiment station men and horticulturists advise against the use of Bordeaux nozzles on the ground that more mixture is used and that as even a distribution of the mixture over the surface is not obtained; but under Missouri conditions, leaving the matter of filling the calyx cavaties of the young fruits entirely out of the question, there are many days during the spring that reasonably good work may be done with Bordeaux nozzles when it is practically impossible to work at all with nozzles which make a fine mist spray. The greater range and penetration of Bordeaux nozzles also make it possible for men working from a tower to more effectually spray the inner portion of large trees which can not be conveniently reached by nozzles making a fine spray, except under conditions of still atmosphere.

For spraying trees that are too tall for the tops to be conveniently sprayed from the ground, the outfit, whether power machine or hand pump, should be provided with a tower sufficiently high to enable the nozzleman to direct the spray downward into the blossoms or over the trees. The work on large trees will not only be more thorough but also will be much more easily done.



Pink just showing.

BLOSSOMS SHOWING TIME TO SPRAY.



Petals just down.

The most opportune time to make the first spraying for apple scab is just as the pink is beginning to show in the bloom. The orchardist who has several days spraying to do, however, can not wait until that time and should begin as soon as the cluster buds are separating in order to finish before the blossoms open.

The second spraying for apple scab is made with the first spraying for codling moth and should be made just after the petals have fallen.

COST OF SPRAYING.

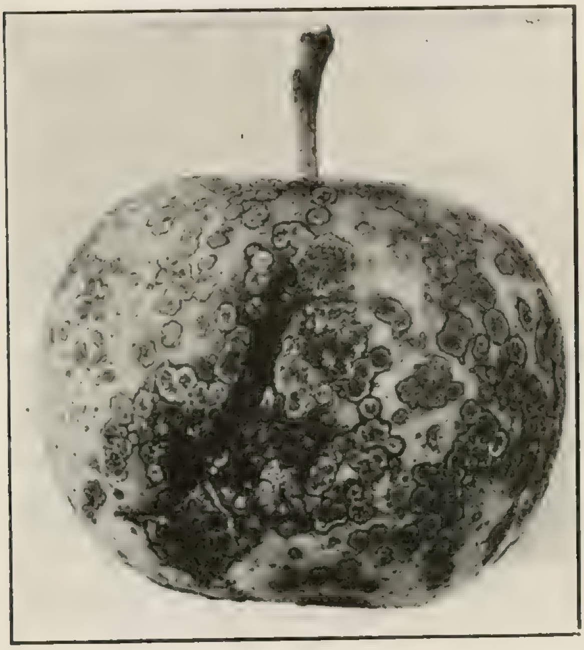
It is rather difficult to estimate the exact cost of spraying for different orchards or for different individuals, owing to the variable size of trees and amount of mixture per tree that might be used by different persons. For combined sprays there is not a great deal of difference in the cost of Bordeaux mixture and lime-sulphur. The latter is perhaps slightly cheaper. Estimating concentrated lime-sulphur worth sixteen cents per gallon and arsenate of lead worth eight cents per pound, the material used in one hundred gallons of spray mixture ready to apply to the trees would cost eighty cents, a trifle over three-fourths of a cents per gallon. For the average twelve or thirteen-year-old tree at least ten gallons of mixture per tree will be required in making the first spraying for codling moth if the work is thoroughly done. For other sprayings five to seven gallons per tree may be sufficient.

Labor usually amounts to about one-third to one-half as much as the cost of material, provided the machinery works well. Estimating team and driver at three dollars per day and two nozzlemen at a dollar and a half per day each, the cost of labor would be six dollars per day. With such a force and a good machine there is no reason why eighteen hundred to two thousand gallons of mixture should not be sprayed out each day, provided the water supply is reasonably convenient. If three nozzlemen are used and the mixture is delivered to the machine by means of a supply tank, three thousand to thirty-five hundred gallons may be sprayed out in a day. This would bring the cost of a season's spraying of five applications at about thirty-five cents per tree, or an average of seven cents per tree for application. As spraying is usually done, however, the cost for the season is much less than this estimate. For eighteen to twenty-year-old-trees the cost per tree for the season should be about one-third to one-half more than for twelve-year-old trees. If only three applications are made the cost would be about one-third less than for five applications.

Petals down. Stamens dry.

APPLE SCAB.

Scab is without question the most common and sometimes one of the most destructive diseases affecting the fruit of Missouri apple orchards. Fortunately it is only an occasional season that serious general outbreaks occur. There are some orchards and some localities, however, in which it appears almost regularly. Some varieties, such as Arkansas Black, Winesap, Mammoth Black Twig, Little Romanite, Minkler and White Winter Pearmain are especially susceptible to the disease and will invariably need to be sprayed for it. While no variety is entirely immune, yet under ordinary seasonal conditions splendid crops of such varieties as York, Grimes and Jonathan have been matured with a reasonable degree of regularity in the southern part of the State with little or no protection against scab. In the north part of the State, Jonathan in old orchards appears to be more susceptible to the disease and some seasons scabs severely. The disease appears early in the spring at the time the flower clusters and first leaves are coming out. Wet, cool weather is most favorable for its development. It occurs on both the foliage and the young fruit. Under favorable weather conditions the infection may be so severe that the formation of fruit buds for the following season's crop will be seriously interfered with. The fungus carries over the winter, to a considerable extent at least, on the fallen foliage. The following spring, at about the time growth activities begin, enormous numbers of spores are produced which are distributed by various agencies to the new growth. During seasons of severe infection the trouble is very difficult to control because the conditions which are most favorable to the development of scab are the very conditions under which it is most difficult to do effective spraying. The matter of a few days in making the first application has much to do with its efficiency. Scab may be prevented by using either lime-sulphur solution or Bordeaux mixture. In cases of moderate infection

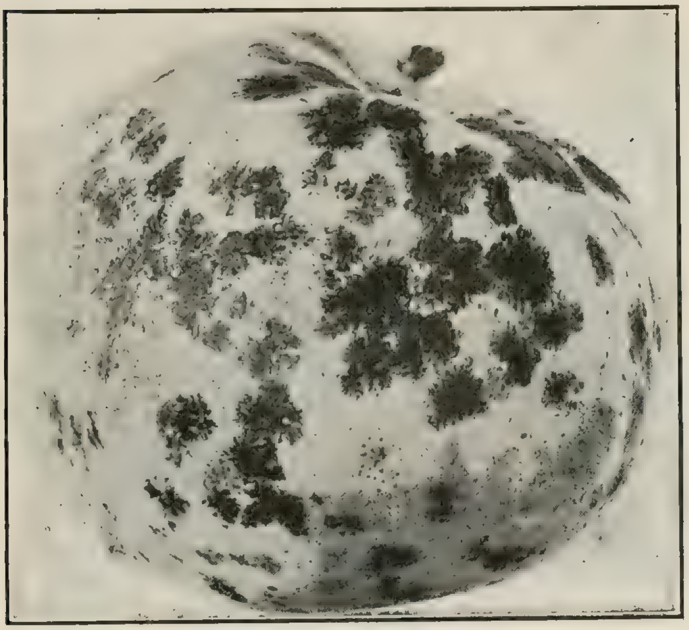


Apple scab.

two thorough applications of the fungicide, one as the cluster buds separate and one after the petals fall will suffice, but in cases of severe infection three or four applications may be necessary. The third application should be made about a week after the second, and the fourth about three or four weeks after the blossoms fall.

APPLE BLOTCH.

Apple blotch is a disease which in some respects resembles scab and is many times confused with it by growers. The severity of the occurrence, the same as apple scab, depends very much upon weather conditions. It appears, however, a little later in the season; its infection usually beginning to appear about the time the scab infections discontinue. Some years infections begin early in the season, about blooming time or shortly after. Other years they apparently do not begin until several weeks after the blooming time. Ordinarily, however, they begin about three or four weeks after blooming. In some localities and on some varieties this disease has proven extremely destructive to the crop. Missouri Pippin, Rhode Island Greening, Mann, Smith Cider, Ben Davis, Gano and Huntsman are the varieties which in South Missouri appear to be most susceptible to this disease. Probably no varieties are immune to it, although York, Grimes and Jonathan are among those least affected by it. It occurs on the foliage and on the twigs, particularly water sprouts, as well as on the fruit and occasionally does serious injury to the tree as well as destroying the crop.



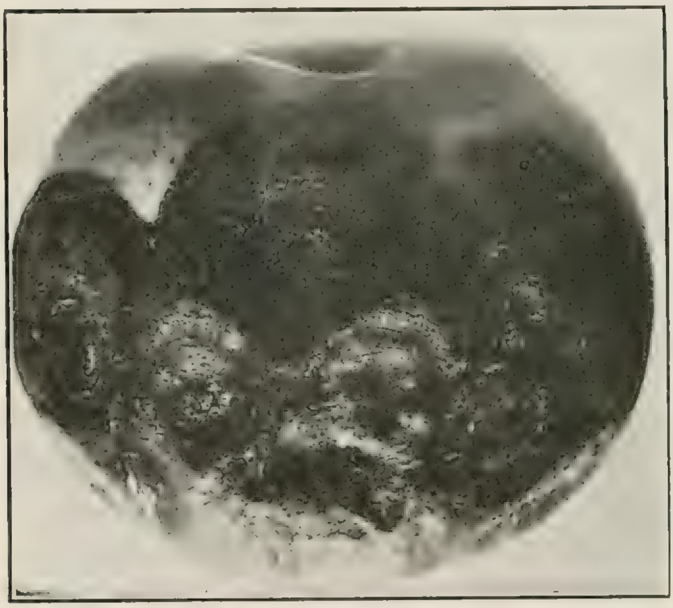
Apple blotch (Phyllosticta).

The disease is very characteristic and after it has once been pointed out should be easily recognized. It begins as small, brown, slightly raised spots on the skin of the apple, spreading to large, irregular blotches with jagged edges, which may cover the entire surface, causing deep cracks and finally mummifying the fruit.

It is somewhat more difficult to suggest a satisfactory treatment for apple blotch than for apple scab, owing to the fact that as yet lime-sulphur solution has not proven to be a satisfactory preventive. Bordeaux mixture will very effectually control the blotch, but its use involves the liability of injury to the fruit.

BITTER ROT.

This is perhaps the most sporadic disease that has ever invaded the apple orchards of Missouri. Occasionally the entire crop of an orchard is destroyed in the course of a very few days. Its ravages are confined largely to the more southern counties of the State. It is rarely observed as far north as the counties bordering on the Missouri river. Fortunately serious outbreaks occur only occasionally and then usually only on certain varieties and in certain localities. There has been perhaps but one or two really serious general outbreaks of this trouble during the history of commercial apple growing in Missouri. The disease occurs on the fruit, also on the twigs, in the form of small cankers. It passes the winter either in the mummied fruit or in the small cankers on twigs from which it spreads the following season. The infections begin to take place in late June and extend on into September. Damp, sultry, cloudy and hot weather furnish the conditions favorable to its development. With the beginning of the cool days and nights in the fall infections usually cease.

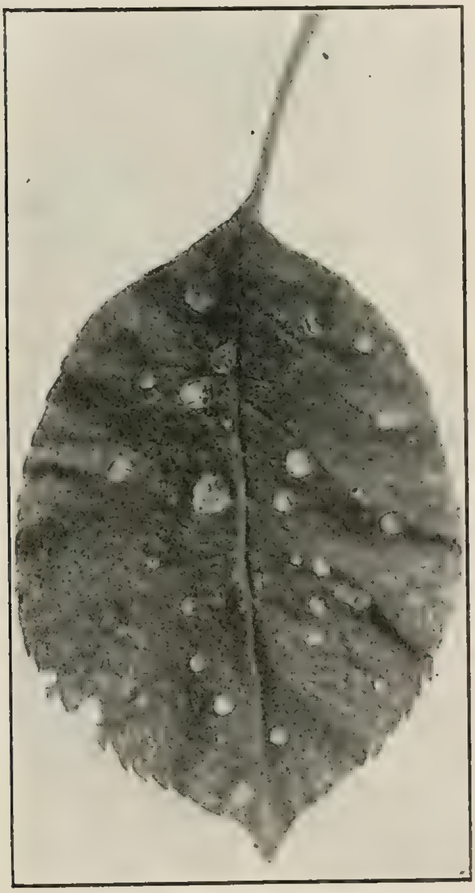


Bitter rot.

This disease may be controlled by either lime-sulphur or Bordeaux mixture, although the Bordeaux mixture is more effective and is generally to be preferred to lime-sulphur, as it is less likely to cause serious foliage injury which may result from making repeated applications during the intensely hot summer weather. On the other hand, under our climatic conditions, Bordeaux mixture frequently interferes materially with the development of color and the fruit does not take on the high finish in that respect that generally follows the use of lime-sulphur. On varieties that are especially susceptible to bitter rot, such as Huntsman, Willow Twig, Givens, Lansingburg and a few others, three or four applications of standard Bordeaux mixture will sometimes be necessary to effect a satisfactory control. The first application should be on the trees at least by the first week in July. The other applications should follow at intervals of two to three weeks, according to the probable severity of infections. Some seasons in cases of moderate severity, three, two, or possibly even a single application made at exactly the right time may largely prevent loss from bitter rot.

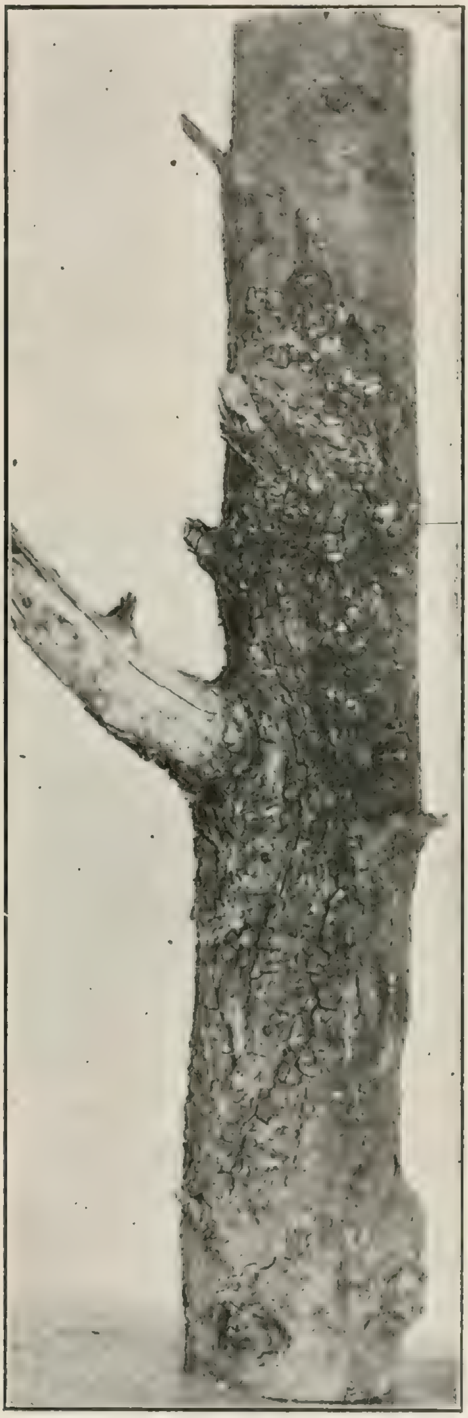
LEAF SPOTS,

These are fungus diseases which occur on the foliage causing premature defoliation and together with the scab fungus are probably responsible for the barrenness of many orchards. The most common one, generally known among growers as "frog-eye," is due to the same or a similar fungus to the one causing black rot. These troubles not only reduce the vigor of the trees and cause the fruit to drop early, but also seriously interfere with the growth and maturity of fruit buds. Leaf spots should be largely controlled by the spraying necessary to control scab and blotch.


Leaf spot (frog eye).

ILLINOIS CANKER OR BLISTER CANKER.

Canker is a general term used to designate diseased, roughened patches of bark on the trunk or branches of trees. There are several kinds of canker to be found in Missouri orchards, but the most common and most destructive is the one known as "Illinois canker" or "blister canker." This disease was first brought to notice by Hasselbring in 1902 after it had been doing serious damage to many orchards in Illinois. It has since been reported as doing considerable damage in several other states in the middle west. It is due to a parasitic organism gaining entrance into the tree through broken or injured places in the bark. This parasitic invasion extends not on and into the bark, but also into the wood, even into the heart wood. This canker is readily distinguished from others because of its characteristic appearance. The surface of the diseased patches, especially the ends of the patches, is dotted with stromata or pustules in which the spores are are born, giving to the cankered area a pitted or blistered appearance. If the dry bark be removed from the dead portion of an old canker these markings will be plainly seen on the wood.


Illinois apple tree canker (blister canker).

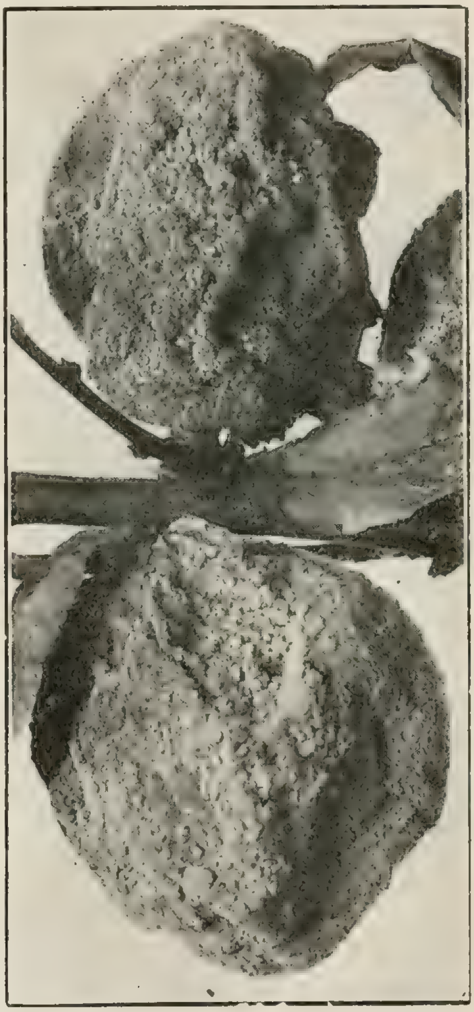
Infections may take place through any broken place in the bark, but the most usual place of infection is through wounds made in pruning. Infected areas extend most rapidly along the length of the branch and may involve a single branch or the entire tree.

The best treatment of canker consists of extreme care in working about the trees, using every precaution to prevent injuring or breaking the bark, either with picking ladders, harness or cultivating tools. Cut made in pruning should be smooth, made close to the trunk or main branch and well protected with paint. It is possible that some temporary benefit may be obtained from cutting out new cankers and protecting the cut surface well against the weather, but owing to the nature of the disease it is not likely that permanent control can be had in that way.

BROWN ROT OF THE PEACH.

This is the most destructive fungous disease directly affecting the fruit of the peach and other stone fruits. Under Missouri conditions, to a great extent at least, it follows curculio or other insect injury to the fruit. Farther south it appears to be more sporadic and not so much dependent upon these insects for its means of gaining entrance into the fruit. Damp, cloudy and wet weather affords the conditions most favorable to its development. The fungus goes over the winter on the decayed mummied fruits, and in the spring under suitable conditions of moisture and warmth it produces great numbers of spores, which are carried by the wind, by insects or by other agencies to the fruit on the trees. To some extent it occurs on the new twigs as well as on the fruit, and occasionally kills a considerable amount of the new growth.

Manner of cutting out newer cankers.

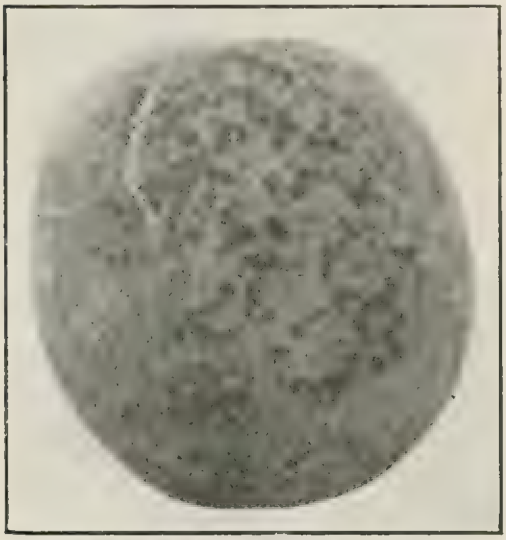


Brown rot of the peach. (From Scott).

If curculio is controlled, there is likely not to be serious loss from brown rot under our conditions. Two or three sprayings will generally be all that are necessary to control both brown rot and curculio. An application just as the husks are about shed, one ten days later, the third four to six weeks before picking time. Arsenate of lead should be used for the first application. Arsenate of lead and self-boiled lime-sulphur for the third. Sulphur may be had from several chemical companies in a condition that requires only the addition of water to make it ready for use and which eliminates the laborious task of preparing the self-boiled mixture.

PEACH SCAB.

This is another fungous trouble which during moist seasons seriously affects the crop of unsprayed peach orchards. It produces small, black spots on the skin of the fruit. The spots may be so numerous as to run together, covering the entire side of a fruit and destroying the quality of its flesh. The greatest damage is done by rendering the fruit unsightly and greatly reducing its market value, although occasionally the disease occurs with sufficient severity to cause serious cracking, dwarfing and premature dropping of the fruit. This trouble, the same as brown rot, may be largely controlled by the use of some form of sulphur in the two early sprayings for curculio, although some seasons an additional one may be needed three or four weeks later.



Peach scab. (From Scott.)

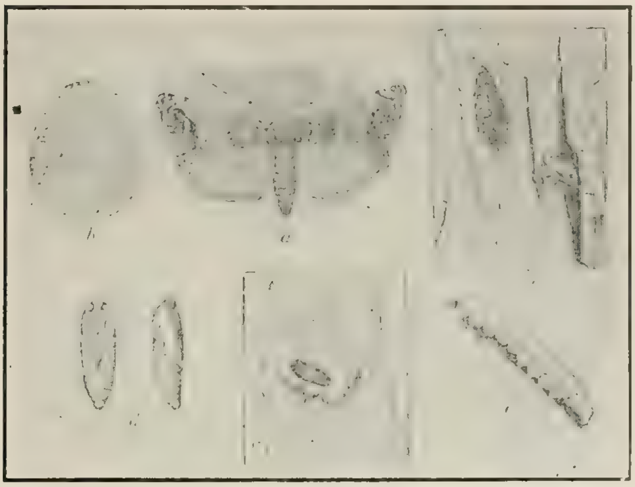
PEACH LEAF CURL.

Peach leaf curl is practically the only fungous disease occurring in orchards of the middle west for which the spraying should be done while the trees are dormant. It affects the foliage of peach trees very seriously some seasons, causing the leaves to become thickened and crumpled and to drop prematurely. The fungus causing the disease begins to develop at about the time the buds are beginning to swell. A single application of Bordeaux mixture or lime-sulphur made just previous to this time will effect almost a complete control.

In orchards that are infested with San Jose scale, lime-sulphur should, of course, be used in preference to Bordeaux mixture, as the application required to control the leaf curl will also control the scale. In fact, orchards known to be infested with San Jose scale will need no special treatment for leaf curl if the spraying for scale is deferred until shortly before the time the buds burst.

CODLING MOTH.

Codling moth is the most common pest that infests the apple orchards of the middle west. There is probably no orchard that is free from it, and there is no other insect or disease that causes so great a loss annually to the apple crop as does this one. Unsprayed orchards will usually run from forty to seventy-five per cent wormy fruit in practically any section of Missouri, while sprayed orchards should run ninety per cent or better of worm-free fruit, provided the applications have been made at the right time and the work well done. The moths appear in the spring about blooming time or a little later and deposit their eggs on the foliage near the fruit cluster. After a number of days the egg hatches and the young worm begins its search for the fruit. When the worm becomes full grown, after having entered the apple, it leaves the fruit and forms a silken cocoon under the scales of bark on the trees or wherever else it may find a suitable shelter and then in a few days it changes to a pupa. It spends about the same length of time in this condition that it spends in the apple and from the pupa the adult moth of the next brood emerges. The total time required for the insect to pass through the entire life cycle from moth to moth ranges from forty-five to fifty days. There are two broods a year, besides generally a partial third, and sometimes a full third brood in Missouri, particularly the southern part. The worms of the last brood go over the winter in cocoons in sheltered places beneath the bark



Stages of codling moth; a, adult; b, egg; c, larva; d, pupa; e, pupa and cocoon; f, moth and empty pupa case. (From Simpson.)

or in the crotches of trees, in the cracks and crevices about packing houses. In the spring they pupate and later the moths emerge.

The loss from this insect can be almost entirely prevented by the proper application of arsenicals. Thorough cleaning up of places where the insect finds shelter for the winter will also have its bearing on the control.

LESSER APPLE WORM.

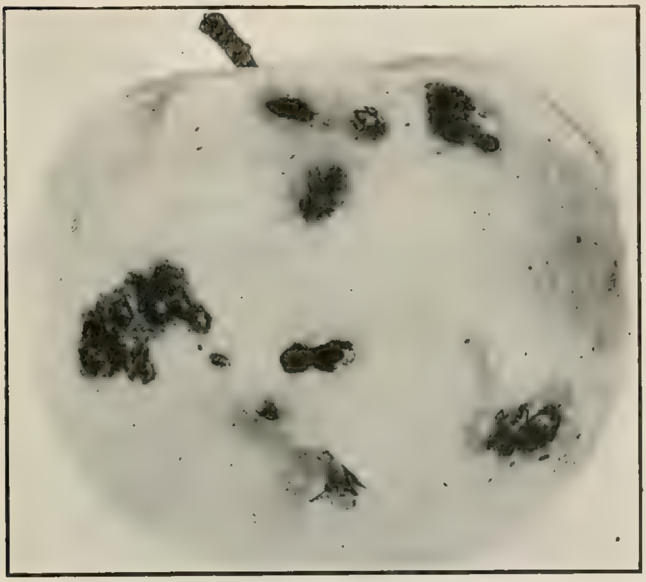
This is a small insect, the larvae of which very much resembles that of the codling moth, and is probably many times mistaken for it. In its habits and life history it is similar to the codling moth, except that it appears later in the season. The injury from the lesser apple worm may usually be distinguished from that of the codling moth, owing to its tendency to burrow just beneath the skin and to make a much more tortuous burrow than does the codling moth. The greater amount of injury from lesser apple worm occurs on the sides of the apple instead of at the calyx end. The treatment for this insect is included in that for codling moth.

CURCULIO.

The plum curculio is a small, snout beetle that is responsible for the "stings" which are frequently so numerous and conspicuous on young apples shortly after the blossoms fall. This is, without question, the most difficult pest to control that infests the Missouri orchards. Although its distribution is not so general as that of the codling moth, yet in localities where it does occur it causes proportionately greater injury to the fruit than does the codling moth. This pest is particularly significant in its relation to the brown rot of peaches and other stone fruit. The punctures that it makes in the skin of these fruits, either for the purpose of feeding or depositing eggs, make ideal places of entrance for the brown rot fungus.

Adult curculio. (From Quintance and Jenne.)

There is but one brood of the insects during the year. The adult beetles pass the winter hiding under trash or other convenient shelter that may be commonly found in the orchards or along the hedge rows or adjacent patches of timber. In the spring about the time the blossoms have fallen from the apples or a little later, they become very active in depositing eggs in the fruit of the apple. In doing this the beetle makes with its mouth parts small, crescent-shaped cuts in the skin of the fruit and then deposits the egg in the cut just under the flap of skin. These cuts or punctures can usually be noticed in considerable numbers in about six to ten days after the blossoms have fallen. The young worm or grub when hatched is already inside the fruit, which makes it impossible to fight the insect in the larval stage, which is the stage that control measures are most effectively applied against insects. When the worms become full grown in the fruit they come out and enter the soil where they undergo the transformation to the adult.



Late curculio injury on apple.

In the control of this insect on apples about two or three applications of arsenate of lead are necessary. The first one being made just after the petals have fallen, the time for the first spraying for codling moth. The second application should be made from six to ten days after the first, as this is about the time that the greatest amount of injury is apparently done. The third application, if given, should be made three or four weeks after the blossoms fall.

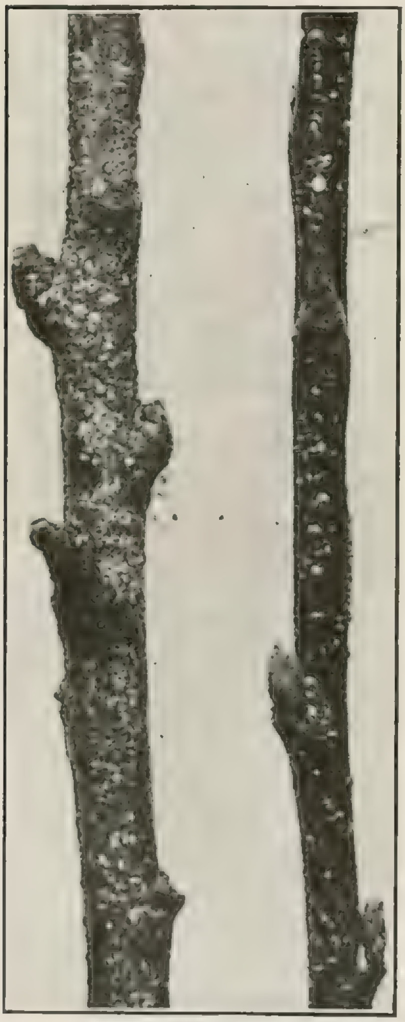
LEAF-EATING INSECTS.

Leaf-eating insects, such as tent caterpillar, leaf skeltonizer or fall webworms are easily controlled by the applications of arsenate of lead at the time of appearance of the worms. If conditions are such that it is necessary to spray the orchard for other important troubles it will probably not be necessary to make additional applications for these insects, unless they should appear in unusual numbers. For cankerworms the first application of poison should be made after the leaves come out, at about the time the cluster buds are separating. This application comes at the time for the first scab spraying, and can well be made in combination with it.

PEACH BORER.

The peach borer is without question the most common and the most destructive insect affecting peach trees, and is a pest that has generally given growers no little trouble and concern.

A method of control has recently been recommended by the California experiment station, which has proven very effective, satisfactory and easily applied. The remedy consists of painting the trunks and crown of the trees with hot asphalt. The dirt is removed from about the crown of the tree. Hard asphalt of the grade C and D is melted in a kettle. The operation of heating should be stopped at a point where a small portion of the asphalt remains unmelted and floats on the top of the kettle. If the heating is discontinued at this point it is then possible to carry the kettle from tree to tree with little or no inconvenience from the hot asphalt. The preparation is then applied with a brush, giving one or two coats. This treatment is reported as being very effective, not only for preventing borers from getting into the trees, but also for destroying those already in.



San Jose scale on peach. Larger twig encrusted. Small one showing the individual scales.

SAN JOSE SCALE.

In some localities of the State San Jose scale is a serious menace to the orchardists and is a trouble not likely to be eradicated when it once appears in a community, although it may be held in check by timely spraying. If the infestation has become serious before it is noticed, two applications will likely be necessary the first season. The first one should be made as soon after the trees become dormant in the fall as possible; the second one as late in the spring before growth starts as conditions will permit. After the first season, unless the infestation is unusually severe, one application made in the spring ought to be sufficient to hold the pest reasonably well in control. Lime-sulphur, either commercial or homemade, or the miscible oils are effective. Some growers are making the spring spraying for scale on apples at the time of the first scab spraying, using winter strength lime-sulphur, and report satisfaction.

Missouri Women Farmers' Club.

OFFICERS.

President—Miss Pearle Mitchell, Rocheport.
Vice-President—Mrs. Rosa Russell Ingels, Columbia.
Secretary—Miss Maude M. Griffith, Clinton.
Treasurer—Mrs. R. B. D. Simonson, Jefferson City.

MINUTES OF PROCEEDINGS, ANNUAL MEETING.

(Miss Maude M. Griffith, Secretary.)

The Missouri Women Farmers' Club met in regular session in the home economics building, Columbia, Mo., at 4 p. m., January 14, 1913. Meeting was called to order by the president, Miss Pearle Mitchell of Rocheport.

Mr. A. J. Meyer, from the Agricultural College, was introduced and spoke of the field of work opened to women farmers, and especial attention was called to the scholarship which has been offered by the Agricultural College by the Women Farmers' Club.

Miss Georgia Cantrell followed with a paper on "Why I Study Agriculture." Miss Cantrell is a student in the Missouri Agricultural College.

Mrs. Rosa Ingels of Columbia, member of the Women Farmers' Club, then spoke of "Woman as a Citizen."

The president then called for a reading of the minutes of the last meeting, which was held in Columbia, January 8, 1912. Minutes were read and approved and the club adjourned to meet again the following day, but there was no session. The club adjourned in order to attend the afternoon tea given by Mrs. A. Ross Hill for all visiting ladies.

On January 16, 1913, the club members and many visiting friends of the organization assembled, as usual, in the auditorium of the home economics building, but found these quarters occupied, so assembled in a classroom. Mr. J. Kelly Wright, lecturer for the Missouri State Board of Agriculture, spoke on "The Future of Women Farmers."

Miss Griffith then gave a somewhat detailed account of the International Congress of Farm Women which met in Lethbridge, Canada, October 22-26, 1912. Miss Griffith was sent by the Missouri Women Farmers' Club as a delegate to this congress.

On meeting the next afternoon, the women farmers again found themselves homeless, so the office on first floor was utilized. An informal business meeting followed, during which time the advisability of women farmers asking for a meeting place in the agricultural building was discussed. A committee, consisting of Miss Mitchell, Mrs. Ingels and Mrs. Fickle, was appointed to take up the matter with the secretary of the State Board of Agriculture. The regular business meeting then followed. Election of officers resulted as follows: President, Miss Pearle Mitchell, Rocheport; vice-president, Mrs. Rosa Ingels, Columbia; secretary, Miss Maude M. Griffith, Clinton; Treasurer, Mrs. R. B. D. Simonson, Jefferson City.

The president appointed the following advisory board: Miss Kinney, Miss Blue and Miss Burroughs. Miss Kinney then presented the question of joining the State Federation of Clubs. After a discussion, the question was put to vote. The result was a majority in favor of becoming a federated club. Miss Mitchell was elected as delegate to the federation, which meets in Columbia in May, 1913.

The club was delighted to receive five new members during the week.

Plans for club extension were then discussed. Many suggestions were given. The club then adjourned to meet at the call of the president.

PRESIDENT'S ADDRESS.

(Miss Pearle Mitchell.)

Perhaps, my fellow club women, a backward look over the year may give us a better understanding of ourselves and I think a better opinion also. Though slow in growth, the club has added to its membership women seriously and earnestly following their profession. Ours still stands out as the only organization of its kind, but from two other states letters have come inquiring about us, our methods and our object, looking toward similar organization.

One evidence of the interest taken in farming for women is the recently established "College of Agriculture for Women" in

Los Angeles, California. This has been done by a millionaire philanthropist who believes in this vocation for our sex.

Over two hundred acres have been purchased as a co-operative farm for women in Sussex, England. The $10,000 necessary was subscribed by women and the business will all be in the hands of women.

The last census showed 307,706 women farmers in America. Many of these are in our own State, though as yet our club has discovered but few of them. In time the woman farmer will awaken to the benefits of organization and exchange of ideas. She will come also to the farmer's convention and collect the knowledge given out by experts, as does her neighbor of the other sex.

We must all the time go in more for intensive farming, and this many of our women are doing. I read the other day of a Miss Smith who was annually realizing $2,000 on land that, before she assumed charge, had yielded only $600 in ten years.

We have evinced our earnestness by offering a scholarship in agriculture for girls. Let us push this work until we have some successful young women putting into practice the scientific methods of farming, young women who are educated, trained farmers, and will not have the hardships of pioneering, such as most of ours have experienced.

This kind of women's work is still in its infancy, but is increasing every year, as women learn to know and appreciate the independence and healthfulness of intelligent effort put into work in the country.

EXTRACTS FROM ADDRESS BEFORE THE WOMEN FARMERS' CLUB.

(A. J. Meyer, College of Agriculture, University of Missouri.)

Missouri is unique and original in a number of things; one of these is your organization of women farmers. If my information is correct, ours is the only state in the Union which boasts an agricultural organization composed entirely of women who are not only farmers in theory, but farmers in fact.

There is no particular reason why women should not manage farms as well as manage any other business enterprise, and women have shown themselves very successful in handling almost every kind of business. I see no reason why girls who grow up in the country should not remain in the country and find there as good an opportunity for the fullest exercise of their business and administrative capacities as can be found in any city. There is no reason, as I see it, why certain women with business energy cannot run a farm as successfully as other women, with a different type of business capacity, run a millinery shop.

There have to be pioneers in every great movement, and the work of pioneers is not so evident to the onlooker as the work of those who come later and build upon the foundation which has been laid. It takes courage and persistence to play the part of a pioneer in the movement you have started. It is easier to start an organization of this kind than it is to continue it and make it worth while. I doubt not but that with the persistence you are putting into the work, in ten years time you will have changed the attitude of women toward agriculture to the extent of showing people that farming is not by any means an impossible or an impracticable vocation for women who have been raised on the farm. The women who are now actually successful in conducting farms are so far separated and so isolated that they are in most cases overlooked entirely. Consequently, people have never caught the idea that women can be farmers. Your organization should do much to popularize this sentiment and to set the fact clearly before the world that there are in Missouri a body of women who are successful in this vocation, and who are sufficiently progressive to want to let the whole world know about it.

All this movement needs is leadership. There are plenty of women looking toward the country today who will be glad to follow along the way you have blazed.

Your president has asked me to speak specifically upon the subject of a proposed scholarship offer, concerning the purpose of which you all have a general idea. This scholarship was offered last year, but failed to elicit a large response. A different plan is needed. I believe that one of the first essentials in a scholarship offer is that the award shall be based upon some kind of a contest. Your purpose is to offer a scholarship for students who will study agriculture. Consequently the contest should be a real farm contest. We have in Missouri a highly successful boys' corn growing contest. In some other states girls participate in similar contests, matching their efforts against the efforts of the boys. I do not know that this is the kind of a contest we want in Missouri, for it is hardly possible to exact the same conditions from girls that we demand from the boys, but I see no logical reason why this scholarship might not be awarded upon the basis of a corn growing contest for girls only. I have talked with the secretary of the Corn Growers' Association, and he assures me that if this plan is undertaken the details of the contest can be carried out through his office with little additional effort. In general, it may be handled along the same lines that apply to the boys' corn growing contest in this State. He assures me further that girls entering these contests will have an opportunity to compete for special as well as regular premiums offered at the annual corn show. The inducement therefore becomes two-fold, and if the project is properly advertised, and advertised well in advance of the corn planting season, there should be a good enrollment for the contest. It is hardly proper to expect that the girls will do all the work necessary in growing the crop, but they can be required to make the germination tests, to direct the cultivation and handling of the crop, to select the corn for seed and show, and to keep all the records throughout the season.

A plan of this kind should be of great help: First, in calling the attention of the younger generation of women to the Missouri Women Farmers' Club; second, in securing a closer co-operation between your organization and the College of Agriculture; third, in interesting a large body of young women in the college and its work.

If the effect of your proposed scholarship offer was simply to bring one girl to the College of Agriculture, it would not be worth the thought and effort you are giving it today. It is the indirect effect of such an offer upon a hundred other girls which is important. The life of your organization, the success of the movement which you have started, depends upon the number of young people you can interest. If you are able to enlist the interest only of women who, by force of circumstances, often with little premeditation, become farmers, your organization will never grow much beyond its present size and influence. But if you can interest a large number of the growing generation to the extent of leading them to become farmers who otherwise would have chosen other vocations, then you will have opened the way to an unlimited range of possibilities. The proposed scholarship is but one of many small but important details that must help you to finally attain a proper relation to the agricultural world, which is the end and object, as I understand it, of the Missouri Women Farmers' Club.

EXTRACTS FROM ADDRESS BEFORE WOMEN FARMERS' CLUB.

(J. Kelly Wright, Institute Lecturer, Columbia, Mo.)

J. K. Wright.

Ladies, I consider it a very great honor to address the women farmers of Missouri. But I do not feel equal to the occasion when I am called upon to discuss at length the subject alloted to me: "The Future of Women Farmers." In the beginning, let me say that I make a distinction between farm women and women farmers. I should not advise young women to take up farming as a business and become women farmers. To me, the greatest institution that the world has produced is the American home. I know of no more enviable position that a woman can hold than that of mistress, wife and mother in a true Missouri home out in the open country.

However, we have in our State a great number of women who by various reasons have come into possession of farm lands. There are women farmers in every section of Missouri. They own the land, have a right to hold it, and to do so they must pay their taxes. They must bear their part of the burden of taxation. I can see no reason why the widow, the sister or the daughter, just because she is a woman, should sell the land that has become hers by inheritance or otherwise, or even rent it out to others. A very great per cent of our women farmers were born on the farm, grew up in farm homes, and had the same opportunities to learn farm operations that the farm boys had. Just what their future will be we can not tell. But their success or failure as owners and operators of farms will in very great measure depend upon their own individual and collective efforts, or in other words upon the women themselves.

Women from Iowa, women from Kansas, who have read of this meeting and the Missouri organization have expressed an interest. I understand that an Iowa woman farmer has come all the way from Iowa to attend this meeting. This is evidence to me that from now on women farmers and even farm women are going to take a more active interest in things pertaining to the farm.

I sometimes think that one very great reason that conditions unpleasant and unprofitable in the farm home exist because women have not in the past taken the same initiative in securing modern convenience for the home as men have in securing modern machinery for carrying on farm operations out in the field. Today one man with improved machinery can do as much work in a day as six men could do twenty-five years ago, and do it more easily. Incidentally, you will notice that the man of the farm never buys machinery that he can't sit on—even the harrows these days are provided with a small truck which is drawn along behind, and on this truck the man sits in perfect comfort caring little whether the field is large or small or the day long or short.

Now, if the men had to make bread three times every day, how long do you suppose it would be before they would come home from town armed with a patent bread mixer? And if the men had to wash the dishes three times a day, how long do you think it would be before they would put rollers on the legs of that kitchen table and push it about from place to place, thus saving a "thousand and one" steps to the pantry and back again. There are hundreds of little conveniences that could be had in the farm home with practically no extra expense if the woman would acquaint herself with them and suggest them.

There are women who manage farms successfully. Not all of the farms that have the appearance of the proverbial "widow woman's farm" are owned and operated by widows. When a woman is left with a farm she has, perhaps, her choice of getting married and turning the farm over to her husband, renting it out, selling it or running it herself. The first proposition is a little risky—sometimes. The second, on account of the great number of unreliable renters against whom no recourse can be had, and on account of a general disposition of renters to get all that they can out of the land regardless of its future productiveness, is not always a safe and economical thing to do. The third is out of the question. Hence it behooves the women farmers of Missouri to acquaint themselves with the best systems of farming, good systems of crop rotation, proper methods of cultivation and, in fact, acquaint themselves with the practices of the best and most successful farmers of the State. When they do this I can see no reason why their efforts in farm management should be any less successful than those of our men farmers. Women are not farmers generally, because of traditions, of a woman's place, a woman's sphere, etc. But the industrial age in which we live today is bringing the labor of women into contact with that of men along innumerable lines of activity. And with it all comes the desire of woman herself to excel in the field of agriculture. If she is as successful in this field as in others, some of our best farmers in the future will be women.

A woman's ability to take charge of a farm and make good as a woman farmer will depend in great measures upon what her earlier training and experiences have been. If we expect our farm women, when by loss of a life partner or otherwise they come into possession of land, to stay in the country and make successful women farmers we shall have to see that they are taught in the rural school the elementary principles underlying farm operations, the methods as practiced by the best and most successful men of the farm, and the beauty of home life out in the open country. The rural school is the ideal place for teaching the fundamental principles of home building. However, I fear that our efforts in educating the youth of our State today are not directed along the right lines. We do not include in our system of education today enough vocational training, not enough industrial training. We are following a system of education that does not fit the conditions of our day, a system of education that is simply a relic of Mediaeval times. Our country boys and girls in too many of our rural schools are taught everything else but the farm and its opportunities.

The rural school and the rural home is the place to train girls to be farmers whether they farm alone or in partnership. In my opinion the failure of many a man of the farm can be traced to the fact that his wife was not a partner in the business, a partner trained to help in meeting and overcoming the problems and difficulties that arise in home building on the farm.

Let the Missouri Women Farmers' Club join in our efforts to make a more efficient farm woman by teaching the girls in our rural schools the right ideals and the things that will make them successful farm women. When we have fixed the right ideals and the success of the farm woman, we need have no fears for the success of the woman farmer in the future. She will not only be able to direct the efforts of others whom she may have employed on the farm, but she will be able to take the initiative, and perhaps lead others in solving many problems that arise concerning the welfare of people on the farm and people in various other lines of activity. She will play an important part in making a better rural life.

THE AGRICULTURAL COURSE FOR WOMEN.

(Miss Georgia E. Cantrell, Student in College of Agriculture, Columbia, Mo.)

I am a farmer. I have lived on a farm the greater part of my life, and expect to return to the farm when I have finished my school work. Being especially interested in agriculture, I am very glad to meet women who are interested in the same work, and I feel that the meeting will be both profitable and enjoyable. I have not visited many Missouri farms out of my own vicinity, and the opportunity of coming in touch with farmers from other parts of the State is certainly beneficial.

The history of the College of Agriculture is, no doubt, familiar to all of you. Its success has been demonstrated in the great number of students who have gone out into the world and are making good in their chosen vocation. It has proved that scientific methods pay. We know that the yield of corn per acre may be increased by careful seed selection and cultivation. I know personally a young man who after taking a short course in the Missouri Agricultural College, won a premium of $65 at the Bates county fair for the best ten ears of corn. He has established a reputation for Boone county white seed corn, and not only supplies his neighborhood but sends to the adjoining county. We have only to refer to the dairy department of the University to be convinced that scientific methods should be employed in feeding and caring for stock. The confidence of the people of the State in the work of the College of Agriculture is shown in the present enrollment in this department.

So much cannot be said for the women's course in agriculture. Only in the last two years has there been in Missouri the opportunity of preparing girls for their work on the farm. The idea has prevailed that girls might learn all of the essentials of homemaking and housekeeping by apprenticeship. This condition of affairs is probably due to an unwillingness to criticize our mother's methods. We have followed in her footsteps, forgetting that we are of another generation and living in a progressive age. At last, however, we have come to realize that there is much to learn and new methods to be employed. There are great possibilities for development and opportunities for usefulness. In no other vocation is a woman more wholly dependent upon her own resources, both mental and physical. Believing that farm girls need special training for their work, the course for women has been designed to meet their needs. It is not the sole purpose of this course to train women for farm managers, since there are comparatively few women who voluntarily choose this work. But we believe that every girl who expects to live on a farm should be capable of managing the farm if the occasion demands it. A thorough understanding of the principles of agriculture is necessary for a happy and useful life. A woman's interests on a farm have a greater range than man's, since it is impossible to separate the management of a farm from the management of the home. If she does not manage the farm she should be able to counsel wisely. These things being taken into consideration, the course for women includes not only agricultural subjects, but training in home economics.

As this course is practically a new movement, and like all new movements requires time to become firmly established, we can give no actual demonstration of its success. However, I shall endeavor to tell you something of the work we have been doing in the agricultural courses and the things that seem to me the most practical.

The work in the course for women during the first two years consists mainly of the fundamentals which underlie all education, and give only a small amount of the time to purely agricultural subjects. The work of the junior year is largely elective, while the work of the senior year is wholly so. This gives the student the opportunity of selecting the subjects in which she is most interested and those most fitted to her particular needs.

In agronomy we have studied the different farm crops. We studied the different varieties of wheat, oats and corn. Besides learning the general characteristics of each type and their adaptabilities we have learned to score them. We made germination tests. It seems that every one reared on a farm should be able to do these things, but I was surprised at my own ignorance, and I don't believe that I am more uninformed than the average farm girl. One of the things that seemed to me most interesting, as well as most practical in this course, was the study of common weeds. It is practical because a knowledge of the habits and growth of the weeds will help us to eradicate them more quickly and economically. The ability to recognize weed seed may prevent us from buying adulterated seed for our farm crops. It has been said that the United States is a dumping place for impure seed. In 1906 test was made of some imported clover seed and it was found to be 48 per cent pure clover seed. The actual cost of 100 pounds of the pure seed was $28.48. When the farmers come to realize the importance of pure seed, and refuse to buy the material put on the market without a guarantee of purity, we may be able to have a seed law in Missouri.

Our work in plant propagation consists mostly of laboratory work. We have studied the different methods of propagation, beginning with soft wood cuttings. We also experimented with tuber cuttings and root cuttings. From our tuber cuttings, potatoes, we took slips and found that they grew very nicely in the ordinary house plant pots. This one thing is or may be of great value in propagating a new variety of potatoes for commercial purposes. We propagated tomatoes by cuttings also. Of the several germination tests made, one of the most interesting was made by allowing the seed to germinate and then to dry. This was repeated several times, and we found that most of the garden seed will germinate the second time. Lima beans and corn germinate the fifth time. However, in the fifth germination only a small per cent of the seed germinated. Grafting is also taught in the woman's course. The students are taught to select their own wood in the orchard, and then graft these scions into other branches. This is something that must be learned by practical experience, and it is one of the most useful things to be learned in agriculture. It is the means employed to propagate apple trees; it is not the only method, but is the cheapest and the one most commonly used. We also studied in the same manner the budding of peach trees. This work seems to me very practical and something that may profitably be used on any farm.

And last, but not least of my agricultural courses, is vegetable gardening. This is to be the most interesting course. Perhaps it is so to me, for the reason that for several years past I have been the manager of our home garden. I did a great deal of the work myself. Since there was no market near us, farmers in our community never sold vegetables. The farm gardens existed only for the purpose of supplying the family with fresh vegetables for the table. The care of a garden is really very pleasant work, especially if we can find time to get into the garden in the early morning before the sun's rays become so warm. We have made a study of the different vegetables, of the different varieties that are suited to the different soils and climates; the varieties to be used for the home and those best suited to the market; the care and management of a hotbed; the hardening of the plants and transplanting.

The preparation and cultivation of the soil are things that are practical every-day problems. They are the things that are common, yet may be worthy of study in scientific methods.

I feel that during my short time here as a student I have gained a great deal of useful knowledge and when I return to the farm, I am sure that I will be more capable than I should have been if I had not attended the Agricultural College. Some few years from now we hope to be able to prove to you the value of the special training in an agricultural college by a demonstration of the girl graduates who are living on Missouri farms.

REPORT OF INTERNATIONAL CONGRESS OF FARM WOMEN HELD AT LETHBRIDGE, CANADA, OCTOBER 22 TO 26, 1912.

(Miss Maude M. Griffith, Clinton, Mo.)

Miss Griffith.

I have spoken to the Missouri Home Makers' Conference of this International Congress of Farm Women which convened in Lethbridge, Canada, last October. I doubt whether I shall be able to tell you much that is entirely different, but possibly I can give you a more detailed account of this greatest agricultural meet on record, for as you possibly are aware the Congress of Farm Women was held in connection with the International Dry Farming Congress. The Congress of Farm Women is a sort of auxiliary to the Dry Farming Congress, and should you ask me why, I could not do better than answer you in the words of Harold Bell Wright, when he says: "Look carefully into every great enterprise that is of value to the world and you will find at the beginning of it some one reaching for a dollar or its equivalent." The Jefferson Worth of this day is Dry Farming Congress, which seems to have been able and willing to foster this movement until it can care for itself in dollars and cents.

It was a great pleasure as well as privilege for me to be able to represent the Missouri Women Farmers at this congress, for in taking part of both farmers and farm women, a meeting of this character should be doubly interesting to us.

The trip to and from Lethbridge was delightful; weather was ideal, and the scenery most interesting—ranging from Missouri cornfields, vast grainfields of the Dakotas, lakes and forests of the northland, semibarren wastes of the frontier, to the lofty Rockies.

The people were the most interesting factor. It so happened that in our car out of St. Paul there were some very interesting delegates from the United States as well as distinguished representatives from the Orient. The ladies representing the publications, The Farmers' Wife of St. Paul and Farm, Stock and Home of Minneapolis, were of our party. They were both charming and very enthusiastic over this work. Professor Overmeyer and Dr. Worst of North Dakota, both having done a great work for agriculture in their own state, were with us, too. Of foreign delegates we had Mr. Alexander Kol, acting agricultural commissioner from Russia to the United States. From Italy was Chevalier Guido Rossati, commercial attache to Italian Consul General in New York. From Palestine was Dr. Aarenshon and his brother, Mr. Alexander Aarenshon. Dr. Aarenshon was one of the very learned men of the congress. He has done a great work in the botanical world and it was he who discovered the origin of wild wheat and is now trying to domesticate same.

Although having undergone the necessary "red-tape" of entering another country, we did not feel like strangers in a foreign land, for the greetings were very cordial indeed. Our own language was spoken everywhere and at every turn; regardless of nationality, there was to be seen one's own national emblem.

When the time came for formal ceremonies, we Americans (for such are people from the United States) did not feel quite so much at home. Within a few hours after our arrival the exposition was formally opened. Later in the evening there were dry farming ceremonies, and the Womans' Congress on the following day. There was a great deal of pomp and ceremony on each occasion.

The formal opening of the exposition was held in open at the fair grounds. The Kiltie band, in native dress, furnished music for the occasion. His Honor, Lieutenant-Governor Bulyea, personal representative of his Royal Highness, Duke of Connaught, Governor-General of Canada, appeared in splendor with all the gold lace and plumage the occasion demanded. He was attended by mounted guard uniformed in red coats of Revolutionary style. The exposition after being handed from His Honor here, to His Honor there, at last became a burden, and was declared formally opened in the name of His Royal Highness, Duke of Connaught, who in turn is representative of His Majesty, King George. After going through certain formalities so many times we found that before the week was ended we could sing "God Save the King," as if we had been in practice always.

There were fifteen different nations represented and 2,594 delegates. Between two hundred and three hundred women presented credentials. During the day the Dry Farming Congress and Womans' Congress held separate sessions, but in the evening, forces were combined and one general session was held.

The delegates from Australia, Persia, Italy and Palestine, each had places on the program for the Womans' Congress and told something of the life of the farm women of their respective nations; each brought hearty greetings.

Building in Lethbridge, Canada, where meetings were held.

From Italy came a most pathetic appeal. Mr. Rossati stated that in some parts of the country women were most shamefully treated, but said the idea for better conditions was beginning to take root. Mr. Alexander Aarenshon spoke of the women of Palestine. He stated the conditions there were not so bad as represented by many writers. He said that most tourists coming to that country landed at Jerusalem, spent their first day studying guide books, took a donkey ride over the city the second day, and the third day wrote a book about the conditions of the whole country.

Mirza Ali Kuli Kahn, charge d'affaires of Persia at Washington, and for several years ambassador to the United States, made the one speech of the whole congress assembled. He was brilliant, classical, sentimental, profoundly religious, and withal was a very fluent speaker. I think his talk of about thirty minutes before the joint session did more to establish a kind, friendly feeling for people of all nations than any other one could have done. His plea was for universal peace, universal brotherhood. He paid a most fitting tribute to the women of his native land, and told of a great many lines of work that were being carried on there. He spoke very interestingly of the veiling of Persian women; also touched upon the training of boys and girls, nine years being legal age for separation, at which time they enter separate schools.

Niel Nielson of Sydney, Australia, was another very interesting personage, who spoke of the women of his country; he spoke of social and economic conditions there. He said his daughter could fit herself out in complete costume for about five dollars, and dress as well as any one present at the congress. He made the statement that statistics showed the death rate among children there to be the lowest on the face of the earth. Not over sixty-nine out of every thousand children die under four years of age. The government takes steps to care for every prospective mother, and for every child that is born, the mother receives $25 from the government.

There were some very interesting women in attendance. From the standpoint of years and activity there was none to equal a Mrs. Card, who is a daughter of Brigham Young. She was one of the pioneers of Alberta and is now quite wealthy. She is evidently still firm in the faith of her father, for there is quite a Mormon settlement about her. Another interesting character who did not appear on the program was a Miss Browning of London, distant relative of Sir Robert. Miss Browning is working in interest of better rural conditions and was in Canada studying existing conditions there in the hope of getting new ideas and inspiration. Another lady of renown from the mother country was a Miss Ravenhill, who has occupied high positions in the educational circles of her country and who is at present living in Vancouver, and is employed by the province of British Columbia. She prepares many of the bulletins which are used in institute work throughout the province. Miss Ravenhill spoke on "Our Daily Bread" and "Physiological Growth and Development in Childhood and Adolescence." Both subjects proved to be of great interest to the mothers present. Mrs. Howie of Wisconsin, who is recognized in the dairy world to be an authority, gave some very interesting talks on the subject. I might add, too, that Mrs. Howie lives on a farm and operates her own dairy. A Mrs. Cooper of Manitoba, Canada, a real farm woman, spoke of "Poultry on the Farm." She did not look the part, but proved to be a well-educated, practical woman who has made poultry a specialty along with various other duties of wife and mother. She has made a very systematic study of the subject and is quoted as an authority throughout her province. She spoke at length on the care to be used in selecting birds to be retained in the poultry yard. Told how she studied the dispositions of the hens and could select the ones which would make good mothers. She had some diminutive coops and devices which she found to be very satisfactory. One of these was a coop or rather nest, with a trapdoor through which the eggs would fall into a lower section, thus doing away with the trouble of the hens eating the eggs.

Dr. Worst followed some of these demonstrations with figures showing the cow and hen from a financial standpoint, giving some very interesting results or rather sums, which could be reached, if all the earnings from one good cow or a dozen good hens were placed in a savings bank for family reserve. I think it was possibly Dr. Worst, too, who in speaking of educating the "Boy on the Farm" along with many other good things, insisted there should be an agricultural education for the young and an agricultural demonstration for the old.

We can not attend the lectures given here at the Agricultural College each year during Farmers' Week without realizing that an effort is being made along these lines. But I do think that Canada is doing more in some ways to educate her people in agriculture than we are doing in the United States.

The government there is spending large sums of money in promoting agriculture. There is the Minister of Agriculture for the Dominion and a minister for each individual province, and more is being done in each province than is being done in our states. The feature of this work that appealed to me most was the interest that is taken in institutes for women and in the systematic organizations of the women of the various institutes. Each province places this feature of the work in the hands of some capable woman, who works under and with the Minister of Agriculture, or with his deputy who has charge of the institute work for men. Private cars make tours of each province much the same as those sent out from the agricultural colleges here—the difference being that the women are cared for as well as the men. Demonstrations are given in butter making, cooking, labor-saving devices, and many practical bulletins are issued and distributed among the people.

There were many Canadian women present who spoke very enthusiastically of the help derived from these institutes.

You might be further interested in the exposition, for here was to be seen the results about which we, as farmers, are much concerned. This exposition was a great affair in itself. The products shown were limited to dry farming sections, but the magnitude was to most people astonishing. The different states and provinces had their separate exhibits much as our states did at the St. Louis or Chicago fairs. When we viewed the California section or the display from Spokane, Washington, we had to think the second time to be able to realize that the exhibits were only in connection with the Dry Farming Congress. There were exhibits from foreign countries also. The exposition was not only interesting from the standpoint of products shown, but from the artistic standpoint as well. Some of the best oats, wheat and barley that I have ever seen were shown here. In the wheat contest for best bushel of wheat, which was open to the world, the prize was awarded to a farmer living near Lethbridge. His wheat tested 68 pounds to the bushel, and the prize was a $2,500 traction engine. In addition to this he was able to sell the remainder of the wheat crop to a seed firm for $4 per bushel.

There are many other things of which I should like to speak that were of interest, but will tell you just a little of the plans for the next year's meet. As was stated to the Missouri Home Makers' Conference, the congress is to be held in Oklahoma next October. It is hoped that more definite lines of work can be mapped out then. It is the aim of the congress to reach as many women as possible within the year to come. There were quite a number of states represented this year, but it is hoped that many more states and countries will send delegates to the meeting in 1913. A Colorado woman is the president for this year, but as yet the plans and programs for the coming season are somewhat indefinite. It is to be hoped that the meeting just past will bear much fruit before another year is ended.

I trust that every member of the Missouri Women Farmers' Club may find it convenient to go to Tulsa, for there is much to be gained. I hope that if I can go next October, it will be possible for me to attend more of the dry farming sessions. This year they were at such distances that one could not take advantage of both without losing much time. Dry farming does not exclude our methods, for as President Widstowe said, dry farming is a misnomer—it means better farming and improved conditions. The important work of the International Congress of Farm Women is: to make it worth while to do the things we have to do.

THE WOMAN FARMER AS A CITIZEN.

(Mrs. Rosa Russell Ingels, Columbia, Mo.)

Our president has asked me to talk a few minutes on the "Woman Farmer as a Citizen." It seems to me that the individual qualities and general interests which make for citizenship among women farmers are identical with those which make women good citizens anywhere. However, we might consider a difference due to environment. What is a citizen? What is a good citizen? I remember once hearing two men discuss the death of a neighbor. They seemed to be searching for something good to say about a man who was calling direct attention to himself for the first time in his life by leaving it. At last one of them said, "Well, he was a good citizen," and the other replied, "Yes, he never done no buddy no harm." Both of these men were counting a man a good citizen simply because he had kept out of trouble.

Citizenship is positive, not negative. Neither men nor women may be counted good citizens, even when death calls for charity, because their lives were free from disputes, in or out of court. This is a positive age, full of action, and when activities are questioned, for results.

The responsibilities thrust upon women in our age have done much to develop what is termed the progressive woman. To me, one of the most hopeful signs of positive advance in the world today is the spirit of tolerance and impersonality among our thinking, active women. I believe that never in the history of the world has there existed so little of jealousy, so much eagerness to do one's work well, so much desire for service, so much breadth of vision and charitable opinion. The spirit of helpful co-operation and sympathetic fraternity animating our great organizations of women have, in a large measure, created a broader, deeper life, pervaded with intense interest in all humanity.

One of the notable things of modern times is the rapidly increasing presence of women in fields of industry. Much is being said and written about "women's sphere," and many maintain that woman's only sphere is that of wife, mother and home maker, this in the face of the fact that countless numbers of women have no homes, husbands or children, and never can have. They must work outside of homes, or die. To marry, to have children, to rear them properly, is the true destiny of the ideal woman, yesterday, today and forever. But, somehow, there are women who cannot follow this destiny and we cannot always treat of the ideal in real conditions. Besides, even the ideal woman, under existing conditions, must perforce be concerned with many things outside the home, because all things bear a close relation to the home. A knowledge of the larger affairs of life is absolutely imperative to the home maker, as well as to the business women, if she is to meet her responsibilities and opportunities with a fair degree of intelligence and success. We must live in our time and follow the rapidly changing conditions. For instance, the housekeeping virtues of our grandmothers would be senseless today. They met the economic conditions of their day, and we must meet ours. What a revelation our Home Makers' Conference would be to those busy ladies who, instead of electric lights, used tallow dips of their own making, and provided the home with cloth, carpets and soap made under their own supervision.

Why are we here? Why are we organized? Because we are responding to the great unrest of our times, because we are trying to reach a point of better adjustment. We need more knowledge, more leisure, more money, a better system of doing the things we have to do, a fuller life. The first step toward adjusting ourselves to our time is to understand our relation to conditions about us. When we realize our responsibilities and opportunities we must live up to them.

Consider the woman farmer, such as compose this organization, and no woman citizen may hold a larger balance of power than such women as we have here today. The landowner has responsibilities as owner of her broad acres, that are identical with those of her farmer brother or neighbor. She also has the same opportunities for gaining information as to the best methods for raising corn, wheat, alfalfa or whatever she wishes to cultivate. She has the same opportunities for obtaining expert advice as to what such land as she owns will produce to give the best results. She is bound by the same rate governing her tax bills, she is bound by the same law governing any bonds issued by the county, she has the same interest in the road which passes her door and the same interest in the school in her district. However, in meeting the obligations imposed by her property, and the opportunities offered by her place in the community, she suffers a severe handicap. She has no voice in the laws governing all these things. To meet her opportunities and responsibilities with incentive interest and wisdom, she needs the ballot. Her opinion must count. Then, and not till then, may she receive her full measure of justice and the community receive from her its full measure of service; for then she may meet all her opportunities and responsibilities. I might say, "Just like a man," but I feel that would fall far short of the matter; rather would I say, "With the brain of a man and the heart of a woman."

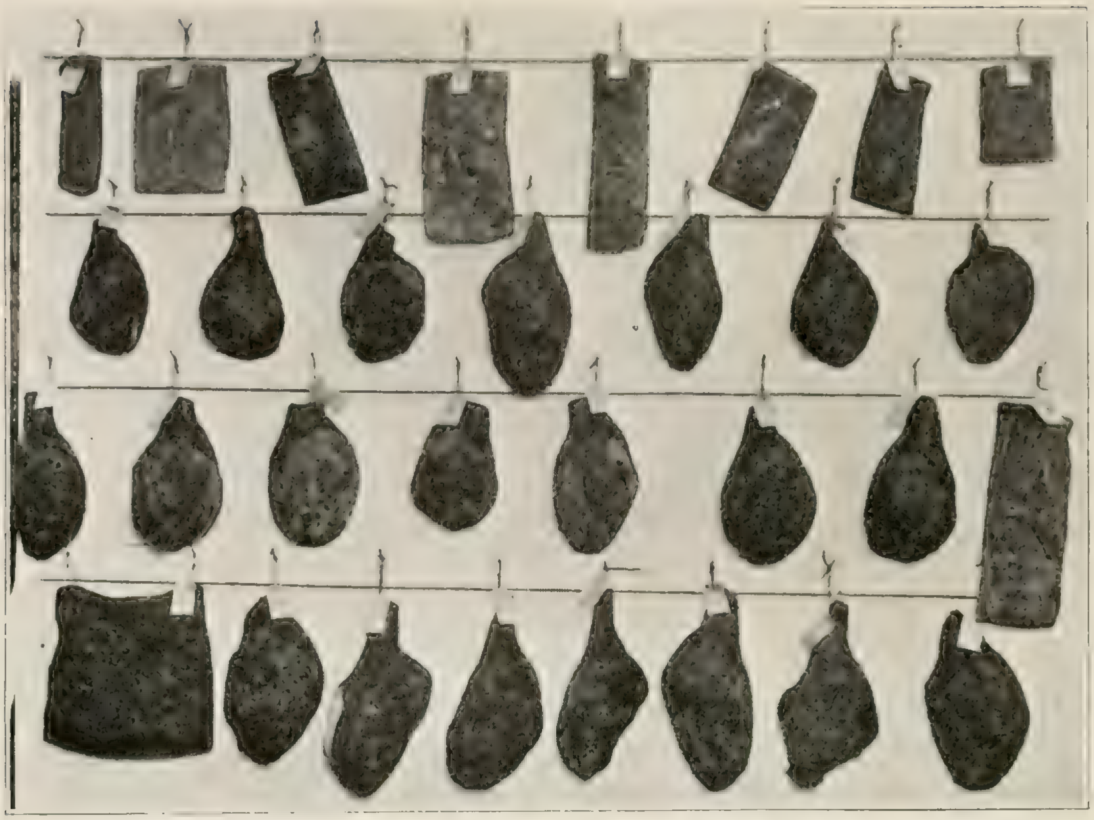
FARMERS' HAM AND BACON SHOW.

(W. L. Nelson, Manager.)

For best home-cured country ham, first premium, $25, N. R. Williams, Columbia; second premium, $15, B. O. Weller, Plattsburg; third premium, $10, Sam D. Williams, Jackson.

For best home-cured country bacon, first premium, $25, T. B. Ingwerson, Walhalla Farm, Bowling Green; second premium, Mrs. W. H. Charters, Charter Oak Stock Farm, Butler; third premium, T. A. Nelson, Eminence Farm, Bunceton.

In Missouri the State Board of Agriculture is encouraging farmers in the home curing of hams and bacon. During the last Missouri Farmers' Week a ham and bacon show was a novel attraction. This exhibit is believed to be the first of the kind ever held under State direction. Premiums amounting to $100 were offered for the best cured country ham. The first premium was $25; second, $15; third, $10. Similar premiums were awarded on bacon. The objects of the show, as stated in the circular which was extensively distributed, were to stimulate an interest in the curing of real country hams and bacon, and to demonstrate how



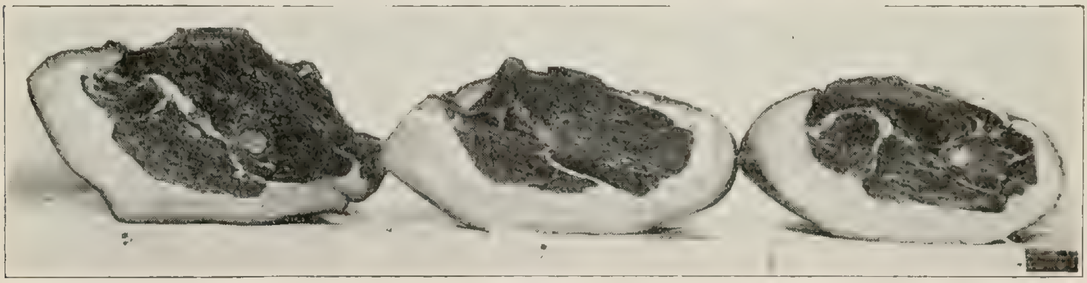
Meat entered in Missouri Farmers' Ham and Bacon Show.

thoroughly Missouri farmers have mastered the mysteries of meat making. The show was advertised most too late to bring out a large number of entries, yet twenty-one choice hams and ten pieces of bacon were sent in. Fortunately every section of the State was represented. The illustrations shown in connection with this article give a general idea of the entries. As was to be expected, the need of a standard or pattern to which those who cure meat for market might look to was strongly accented. There were almost as many trims as entries. Some of the meat of highest quality was not of neat appearance, and if offered for sale to the city man used to the inviting shape in which the packing house product is presented, would have found slow sale. In fact, the first prize hame of the show (No. 2, next to large piece of bacon on bottom row), was not as well trimmed as it should have been. However, the judges took into consideration the fact that this being the first show of the kind and no standard having been established, only a slight cut should be made on this account. They took the position that the curing of a good piece of meat requires much more skill than the trimming. However, the committee recommended that at the next show considerable attention should be given to the trim, symmetry and general appearance of the meat.

The second prize ham (No. 16, second row from bottom and second ham from right), was one of the very best trimmed pieces of meat in the show. What is true of this ham was also true of the third prize ham, No. 11, second row from top, and second from right.

The committee in judging the hams first probed into each one with a trier. After discarding those that were of off flavor, soft or otherwise deficient, eight or ten of the best hams were cut. Then before a decision was finally reached, a small piece of meat from each ham was cooked and sampled. In the first choice ham the meat was of unusually good quality, but there was most too large a proportion of fat to lean. However, the fat was sweet and palatable. A point in favor of this meat was that the lean, while of desirable firmness, was not too hard as is sometimes the case in old hams. It was the opinion of the committee on awards that while each farmer should, in a measure, be allowed to follow his own fancy in the triming of meat, the short ham (not short as is No. 21, second row from bottom, fourth from left,) is much to be recommended in preference to the long trim, which means waste of meat when cooked. Ham No. 5, bottom row, second ham from left, might have been greatly improved by closer trimming, putting much of the fat shown to the right into the lard kettle or sausage mill. Ham No. 30, to the right of No. 5, is a good example of the most desirable long trim and was one of the best entries. Ham No. 14, bottom row, second from right, illustrates what the trim

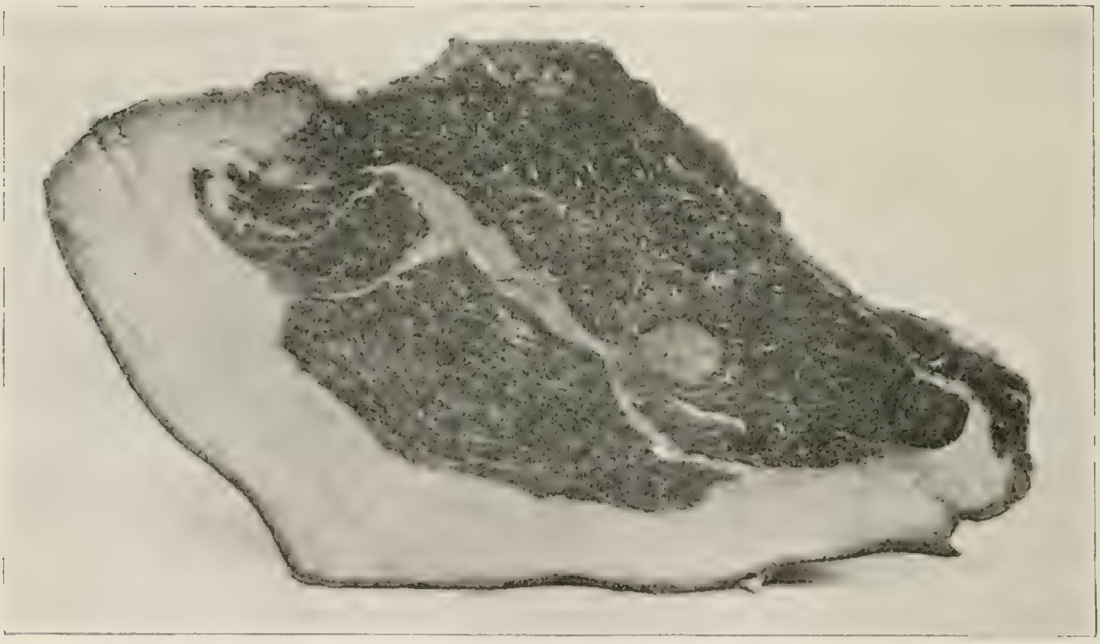
First, second and third prize bacon.



Parts of first, second and third prize hams.

of a ham should not be. Here the market possibilities of a good piece of meat were spoiled by poor trimming, probably resulting from cutting up the meat while it was yet warm.

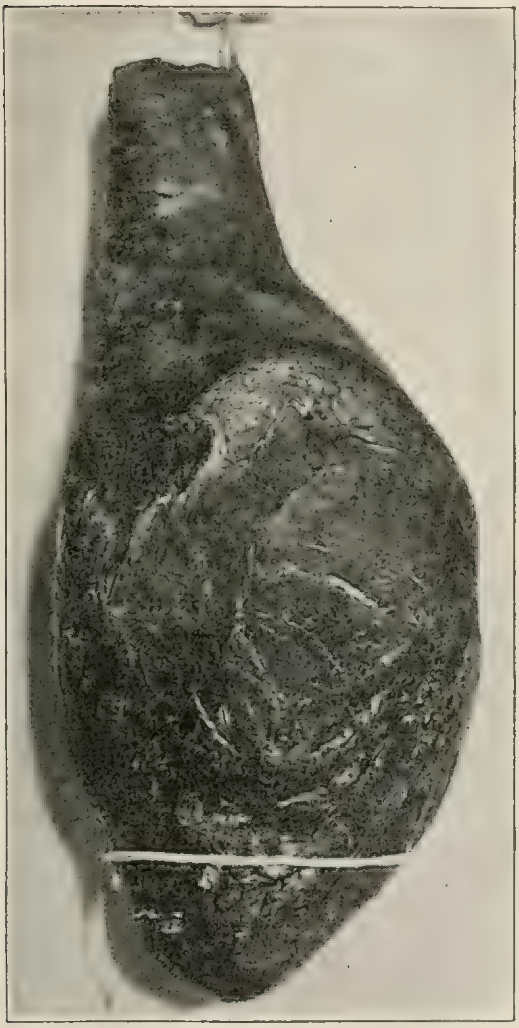
The first prize piece of bacon was No. 23, top row, fourth from right, the long rather narrow piece. The marbling was excellent, the flavor all that could be desired, while the proportion of fat to lean was regarded as proper. Nor was this meat too hard nor so soft as to seem green. The second prize piece of bacon was No. 28, top row, second from right. Third prize was No. 8, the piece hanging just to the left of the second prize piece. Both of these pieces of meat were of good quality and much alike. They were hardly so firm as the first prize bacon. Entry No. 7, the large side of meat on bottom row, while of good quality, shows a mistake so frequently made by farmers. This meat should have been split in two so as to leave one thick and one thin piece of bacon. The thick strip should then have been sold, worked into sausage or lard, or used early in the season. Bacon, in order to sell well, must present an inviting appearance. This was thoroughly demonstrated at the conclusion of the show. The narrow, well-trimmed pieces were eagerly sought for at twenty-five cents per pound, while it was hard to dispose of some other pieces at fifteen cents.



Cut of first prize ham. Excellent quality, but trim might have been improved.

The committee on awards made up of President H. J. Waters of the Kansas Agriculture College, Prof. P. F. Trowbridge of the Missouri College of Agriculture and Mrs. Betty Gentry of Sedalia, said in its report of the show: "Your committee earnestly recommends that the show be continued and that announcement of this purpose be made early so that the farmers may make arrangements to save their best meat for the exhibit. A tentative score card for judging hams was suggested, as follows: Size and form—weight (7 to 15 pounds), 5; trim, 10; symmetry, 5; total, 20. Cure and quality—flavor, 50; color, 10; texture, 10; proportion of fat to lean, 5; marbling, 5; total, 80; grand total, 100."

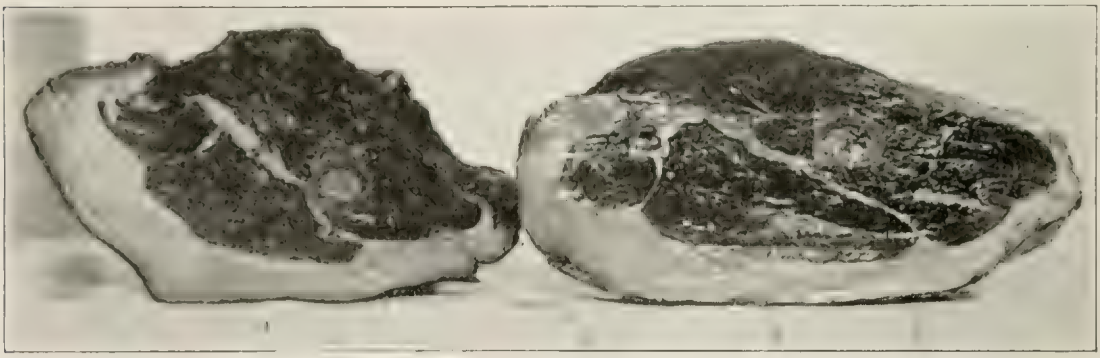
The interest shown in the first Missouri farmers ham and bacon show was even more than had been anticipated. During almost every hour of the four days when the showroom was open a crowd was present to see the meat and to discuss the relative merits of the entries. These discussions resulted in the exchange of many tried recipes and in a general awakening in the matter of meat making on the farm. It is proposed to make the meat show one of the permanent features of Farmers' Week. By so doing it is believed that in time a standard for hams and bacon will be as thoroughly established as has been for corn. It might be said that at the first corn show held in the State there were few more entries than were at this first meat show, and there were almost as many kinds of corn as there were cuts of meat in the initial meat show.



A fine ham entered in show. Judges suggested that shape of ham might have been improved by shortening to point indicated by string.

At this time, when the high cost of living is being so frequently mentioned, it would seem worth while for other states and even for local agricultural organizations, including county fairs, farm bureaus and agricultural clubs to promote meat shows. There is a profitable market for each piece of really good meat that the farmer has to sell. As proof of this, the few hams offered for sale at the close of the Missouri show "went like hot cakes" at 25 per cent per pound. Those who have tried to buy a good country-cured ham on the market know that it is practically impossible to do so.

The entry blank used in the Missouri show seems to meet all the requirements. It may be well to briefly describe it as a guide for other shows. After each of the following questions follow a blank to be filled out by the exhibitor: Meat entered—Ham? Piece of bacon? Name of express company? Amount prepaid express charges? Do you want ham returned? Do you want bacon returned to you? If you prefer to have board sell meat and send you money, what is your price per pound for ham? What is your price per pound for bacon? If you do not want meat returned or sold what disposition do you wish made of it? At the bottom of the blanks were spaces for name and postoffice address. It was required of each contributor that the meat be sent prepaid and that on each box should be the name and postoffice address of the sender. This is important. It is also important that a definite time be set in which to close the entries for the show. One requirement in the Missouri show was that all meat be received in the building where the show was to be held not later than Saturday previous to the opening of the show on the following Tuesday. In order that there might be no misunderstanding it was plainly stated in the circular of information as follows: "Meat intended for entry but not received on time cannot be allowed to compete. Even though it may be in Columbia on Saturday it will be barred unless actually received at the building. This rule will be strictly adhered to and is fair to all. No exception can be made." Committees undertaking to conduct such a show will find it well to have such a rule, which if in force may prevent some unpleasant situ-



Parts of first and second prize hams.

ations. In the Missouri show a few entries came in late but there were no disputes. Those who had sent the meat recognized the fact that it was not the fault of the show management that it failed to get there in time. They were disappointed, but not disgruntled.

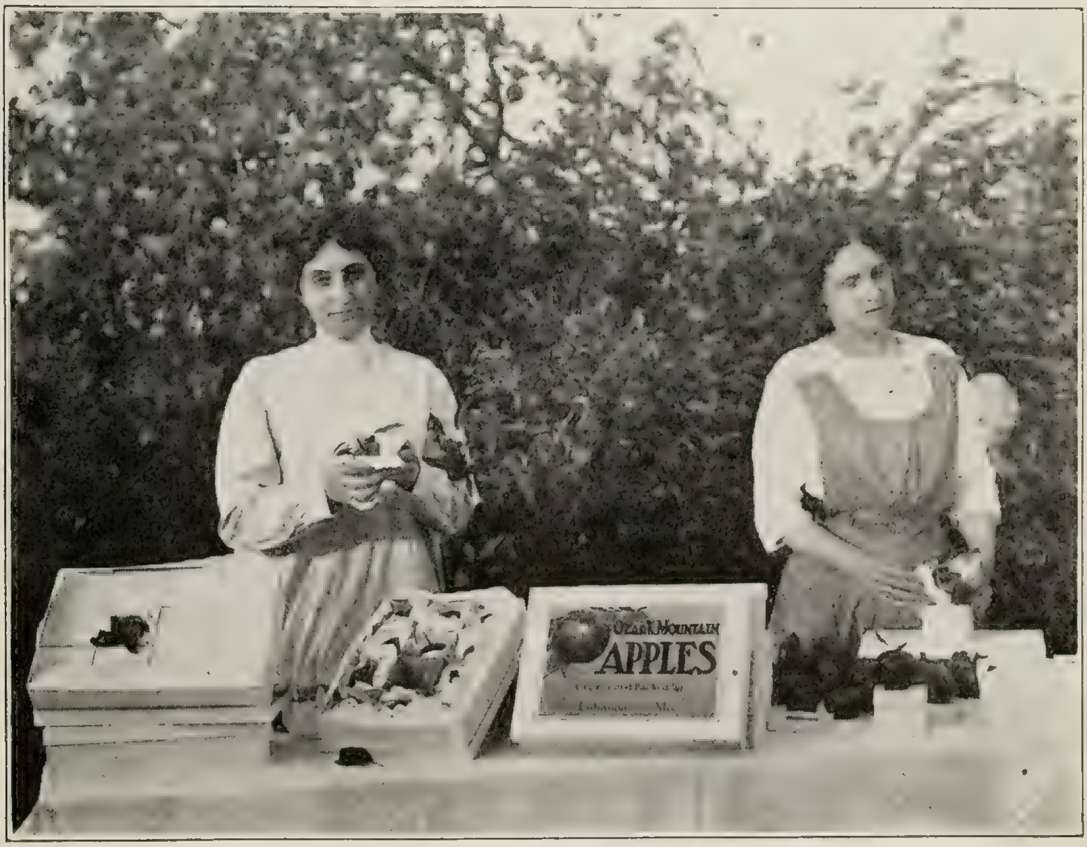
MISSOURI APPLES AT FORTY CENTS EACH.

(A. A. Coult, St. Louis, Mo.)

Missouri apples got into New York's most exclusive society last winter and established a record for high prices, at forty cents each, notwithstanding that the apple markets in all sections of the country were glutted and prices were so low that many orchards were not picked.

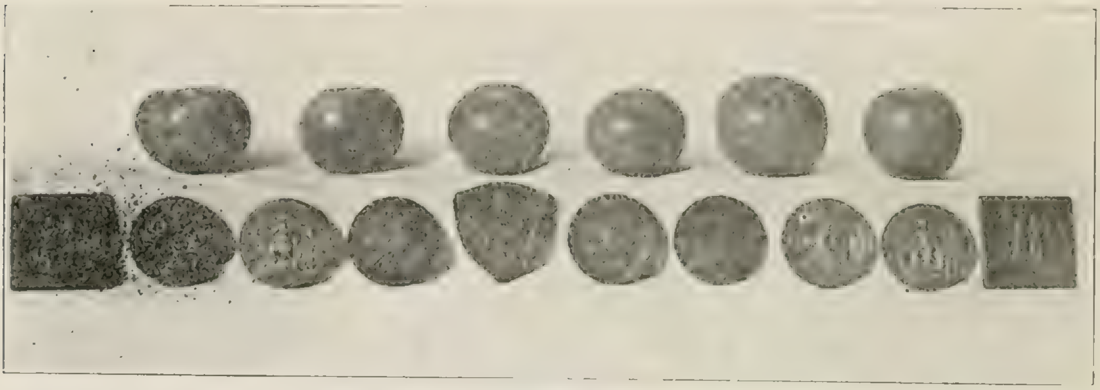
The apples were raised by A. T. Nelson & Son at Lebanon, Mo., and they received fifteen cents each f. o. b. Lebanon for 6,000 of their fancy apples, packed for the exclusive New York hotel trade.

Each apple was perfect in shape and color, three and one-quarter inches in diameter, with at least two natural leaves at-



Young ladies wrapping and packing the forty-cent apples, showing the individual boxes packed in a carton and an open carton of the cheaper grade of apples packed in compartments. Also a cover for the carton.

tached to the stem. Young ladies with shears cut the apples from the limbs to protect the leaves and then dipped apples and leaves in a solution which closed the pores, causing the leaves to retain their natural colors and conserving in the apples their best flavor. After the solution had dried, each apple was wrapped in soft tissue paper and packed in individual pasteboard boxes. The tops were sealed on with gummed paper. On the top of each box was artistically printed the name of variety it contained and the grower's name and address. Twelve boxes filled a carton, on the cover of which was an attractive label in colors showing a bright red apple on a stem with several leaves and the wording, "Ozark Mountain Apples, grown and packed by A. T. Nelson & Son, Lebanon, Mo." The variety contained in each carton was stamped on the label. They also put up a thousand cartons containing twelve apples, each packed in compartments, for which they received fifty cents at Lebanon. Those apples did not have any leaves attached to the stems, nor were they dipped in the solution. They retailed in New York for $1.00 a dozen. The varieties used in packing the above orders were: Ingram, Minklers, Willow Twig, Gano and Ben Davis. About half of the order was filled with the latter variety. In addition, they packed 5,000 barrels of very fancy apples which they held in storage for the holiday trade, receiving from $5 to $6 per barrel for the lot.



The ten gold medals won by A. T. Nelson during the last twenty years on his apple exhibits at the world's largest expositions. They are a credit to Missouri grown apples.

Messrs. Nelson & Son were able to command such high prices for their apples because they have built up a reputation for producing and packing the highest grade fruit. The senior member of the firm has ten gold medals and a bushel basket full of blue ribbons which he has won on his apple exhibits at the world's largest expositions during the last twenty years. One of them was received at the Universal Exposition in Paris during 1900 for the best display of apples. The others were received at the Chicago World's Fair, Omaha Exposition, Pan-American Exposition, St. Louis World's Fair and elsewhere.

A young lady with shears cutting the apples from the limbs to protect the leaves on the stems. The photograph also gives an idea of the quality of the apples used for the fancy individual pack.

Ozark Mountain grown apples have demonstrated that they can compete in quality and price with those grown in any section of America. Missouri apples have set the high-water record for prices and with the publicity obtained therefrom during the past winter, this State is in position to quickly become the banner fruit-producing State in the country if the growers will standardize their grading and packing and co-operate together to control the best markets.

LIVE STOCK MARKETS OF YEAR 1912.

(Compiled from Market Papers and from Reports to Board of Agriculture.)

Live stock prices for the year 1912 ruled higher than for the preceding year. The advance was doubtless due in part to a shortage of live stock, not only in Missouri but in other states.

CATTLE.

The St. Louis market is one of the few which shows increased cattle receipts for the year. Receipts for 1912 were 1,199,900 head, compared with 1,071,985 in 1911. Cattle receipts at Kansas City were 1,943,390 head in 1912; 2,124,772 in 1911. St. Joseph received 450,935 head of cattle in 1912; 466,535 in 1911.

The Daily National Live Stock Reporter, National Stockyards, East St. Louis, Ill., reviews the 1912 cattle trade, in part, as follows:

"The beef steer trade during the year 1912 was a world beater when high values, record-smashing tops, and radical fluctuations are taken into consideration, and of course these points are the ones that deal directly with the market situation. Never in the history of the steer trade has the range between common and prime steers been so large, and never before in the history of the St. Louis market did beef steers reach such a high level.

"One of the principal features of the past year's beef steer trade is the wide range in prices. This may partly be accounted for by the difference in quality, yet practically the same difference in quality has been evident during every year. The bulk of the steers of course do not show this range, but when we see prime steers selling at $10.80 and $10.40, and on the same day steers going to the killers at $5.50 and $6.00, this wide range in values is very apparent. There is one solution, and this is the fact that while prime beef went the highest in history, the common steers were not making a proportionate big headway. Four head of steers sold at $11.00 per hundredweight and carloads sold at $10.80 per hundredweight, these prices were the highest of the year and the highest level that beeves have ever reached at this point. In 1911 the carload top was $9.40, paid for yearling beeves. We can plainly see the difference in the high points of the two years. The average top for the year 1912 was $9.10 with an average bulk $7.10 to $8.32. In 1911 the average top was $8.23 and the average bulk of prices was $5.42 to $6.97, or about $1.55 under the 1912 average. We might as well say right here that there was great disappointment in 1912 Christmas beef prices owing to the fact that a severe break hit the market in December, and $10.00 was the record price for Christmas cattle. So, despite the big difference in prices at the high points between 1912 and 1911, Christmas cattle the past year brought only 60 cents per hundredweight more than they did in 1911.

"The medium to good grades of beef made up the big end of the year's supply and on this class centered most of the juggling of prices. For the biggest part of the year these grades moved at a range of $2.00 to $2.75 higher than a year ago, but the break at the year's close brought the advance over the corresponding time a year ago down around 50 cents to $1.00.

"Yearling steers had a very good year, particularly the choice to prime class. The top for yearlings was $10.75, also a new market's record.

"The big advance in feeding prices started in April and the high point was reached in September. In that latter month good weight feeders were moving at a range of $6.25 to $7.00, and several loads went to the country as high as $7.50. A top of $7.50 out of first hands was the high price of the year, but this shows up very favorably with 1911, when the high price was $5.60. The bulk of the feeding steers in 1911 sold at a range of $5.00 to $5.60.

"The top for carload heifers for the year was $9.10, which is the market's record for this class of beef. Taken as a whole the trade has been conducted on a much higher plane of values than it was a year ago. The average top for 1912 was $7.89 and the average bulk $5.40 to $6.66. In 1911 the average top was $6.70 and the average bulk $4.67 to $5.67. We can easily see by this comparison the level which heifer beef attained during the past twelve months, the top showing a gain of $1.20, and the average gain of the bulk being about $1.00 per hundredweight."

The Daily Drover's Telegram, Kansas City, in reviewing the 1912 cattle market, said:

"Prices of all classes of cattle from choice beeves to calves advanced materially in the first four months of the year and averaged at the highest level ever known in the history of the market. In the next four months beef steer prices fluctuated more or less, owing to the free marketing of grassers from Kansas and Southern pastures. During this period choice to prime fed steers were scarce and maintained steady prices. Grassers started in at the highest level ever known. Butcher classes broke 50 cents to

$1.25 in the summer for grassers, although common cows and cutters, which were scarce during the whole season, maintained the highest level ever known for this class.

"In the final quarter beef steers fluctuated more than in the forepart of the year, having reached the extreme high level in September there were gradual declines until the end of the year, with occasional reactions for a few days. Butcher grades closed strong to higher in the final quarter and from $1 to $2 higher than a year ago. Cows and heifers are growing scarcer all the time, owing to the fact that a good many are being held back for breeding purposes. Calves closed at the high level of the year and from $2 to $3 higher than last year. The abnormal high prices are maintained through scarcity for the same reason that cows and heifers are held back—to replenish the pastures and feed lots.

"The stocker and feeder trade generally followed the course of the beef trade and reacted with it. As a whole prices were on the highest level ever known, still feeders generally made money in handling them.

"Top prices in beef steers ranged from $7.90 in January to $10.90 in September, with a few Christmas steers in December at $11.10. The prize winners at the American Royal show in October sold up to $12.40, the highest prices ever paid on the Kansas City market from one year's end to the other. The high price paid for heifers was $9.25 and for mixed yearling steers and heifers $9.65. Yearling steers ranged up to $10. Top prices of feeders ranged from $6.60 to $8.25, and stockers from $6.10 to $8."

HOGS.

Hog receipts at the National Stock Yards, St. Louis, for the year 1912, totaled 2,529,897 head. During the year 1911, when a new record was made at these yards, 3,123,000 hogs were received. Kansas City received 2,523,331 hogs in 1912 and 3,167,816 in 1911; St. Joseph, 1,969,933 in 1912 and 1,921,535 in 1911.

The Daily National Live Stock Reporter, in reviewing the 1912 hog market said:

"January saw tops going at $6.40 to $6.50 and the bulk from $6.00 to $6.25 and this was the low period of the year, as in February prices ranged 10 to 15 cents higher and other months still higher. The high point was reached early in October when the top went up to $9.32½ and the bulk went at $8.85 to $9.20. From this time to the close of the year there was a gradual decline."

The Daily Drover's Telegram, Kansas City, said of the hog market:

"The hog industry in 1912 was one of the most profitable in several years. Substantial prices were maintained practically throughout the entire year in spite of the abundance and cheapness of feed in the last six months. The much heralded shortage of hogs in the country was noticeable to a large extent in the last half of the year when receipts everywhere became smaller. The disastrous fall of 1911 was directly responsible for this shortage, as a great many stock hogs were wiped out by disease that spread over the country. However, the free application of cholera serum, together with more sanitary handling, did much toward eradicating the disease, and sick hogs were in small percentage of the supply, comparing with last year. Weights and quality were also largely improved during the past year.

"Following is the opening and closing range of prices for each month (bulk of sales), and net gain or loss for the year:

	Opened.	Closed.	Gain.	Loss.
January	$5.75 to $6.15	$5.85 to $6.32½	$ .13½	
February	5.75 to 6.25	6.05 to 6.35	.20	
March	6.15 to 6.40	7.45 to 7.65	1.27½	
April	7.50 to 7.90	7.60 to 7.90	.05	
May	7.50 to 7.82½	7.15 to 7.45		.36
June	7.25 to 7.55	7.45 to 7.60	.17½	
July	7.40 to 7.60	7.80 to 8.05	.42½	
August	7.90 to 8.15	8.50 to 8.70	.57½	
September	8.50 to 8.75	8.50 to 8.70		.02½
October	8.40 to 8.70	7.40 to 7.70		1.00
November	7.50 to 7.75	7.60 to 7.80	.07½	
December	7.50 to 7.75	7.10 to 7.40		.37½

"From January until the middle of March prices were from 50 cents to $1.80 lower than the same time last year. The condition was easily traced to large receipts of unfinished lightweight hogs that were being marketed, because of much sickness in the country. From March until the close of the year, the market was always higher than 1911, and the lowest price in that time was only 50 cents lower than the high mark of last year. In April, May, June and the first part of July, the market averaged practically steady with prices fluctuating between $7.65 and $8.05. Exceedingly light receipts in August, September and October, caused an extremely bullish sentiment in the market, and prices during that period advanced steadily until $9.05, the high mark of the year, was reached. November and December were bearish months and prices declined almost as sharply as they rose in the previous months. On the close of the year prices were $1.50 lower than the high time and $1.20 higher than the low mark. Comparing with values paid at the end of 1911, closing prices were $1.35 higher."

SHEEP.

The 1912 sheep market at St. Louis is reviewed by the Daily National Live Stock Reporter, in part, as follows:

"The arrivals amounted to around 1,030,000 head, which shows a gain over 1911 of around 60,000 head and more than 300,000 more than any other year. The sheep trade has grown rapidly the last ten or fifteen years and no branch of the business needs still further increases in receipts than the sheep market.

"Prices were not only high when compared with other markets but they were high compared with 1911. At the outset of the year best lambs were selling at $7.00 to $7.35 and best mutton sheep at $4.25 to $4.40. Prices were slightly under this basis the latter part of February and early in March, but later were much higher than at the opening of the year. Best lambs early in May brought $9.00 to $9.40 and good mutton sheep $6.50 to $7.00. Spring lambs at the same time were bringing $10.00 to $12.00.

"Early in October good lambs were down to $6.50 to $7.00 and good sheep $3.75 to $4.00, which was the low point of the year, as values steadily improved during the next two months and the year closed with best lambs bringing $7.75 to $8.25, good yearlings $6.50 to $7.00 and mutton sheep $4.35 to $4.50."

Sheep receipts at Kansas City totaled 2,133,976 head for the year 1912, as compared with 2,175,493 for the preceding year.

The accompanying table, taken from the Drovers' Telegram, shows the high prices paid for mutton and lambs in the different months of the year 1912 at Kansas City market:

Month.	Lambs.	Yearlings.	Wethers.	Ewes.
January	$7.00	$6.00	$4.80	$4.35
February	6.60	5.55	4.75	4.25
March	7.75	6.60	6.00	5.70
April	10.10	7.75	7.00	6.50
May	10.00	8.00	7.50	7.00
June	9.85	6.25	6.00	5.60
July	8.00	5.80	5.00	4.25
August	7.55	5.35	4.40	4.00
September	7.40	5.45	4.60	4.25
October	7.45	5.35	4.65	4.25
November	7.65	5.75	5.15	4.50
December	8.55	7.35	5.60	4.75

MODEL DAIRY FARM IN THE OZARKS.

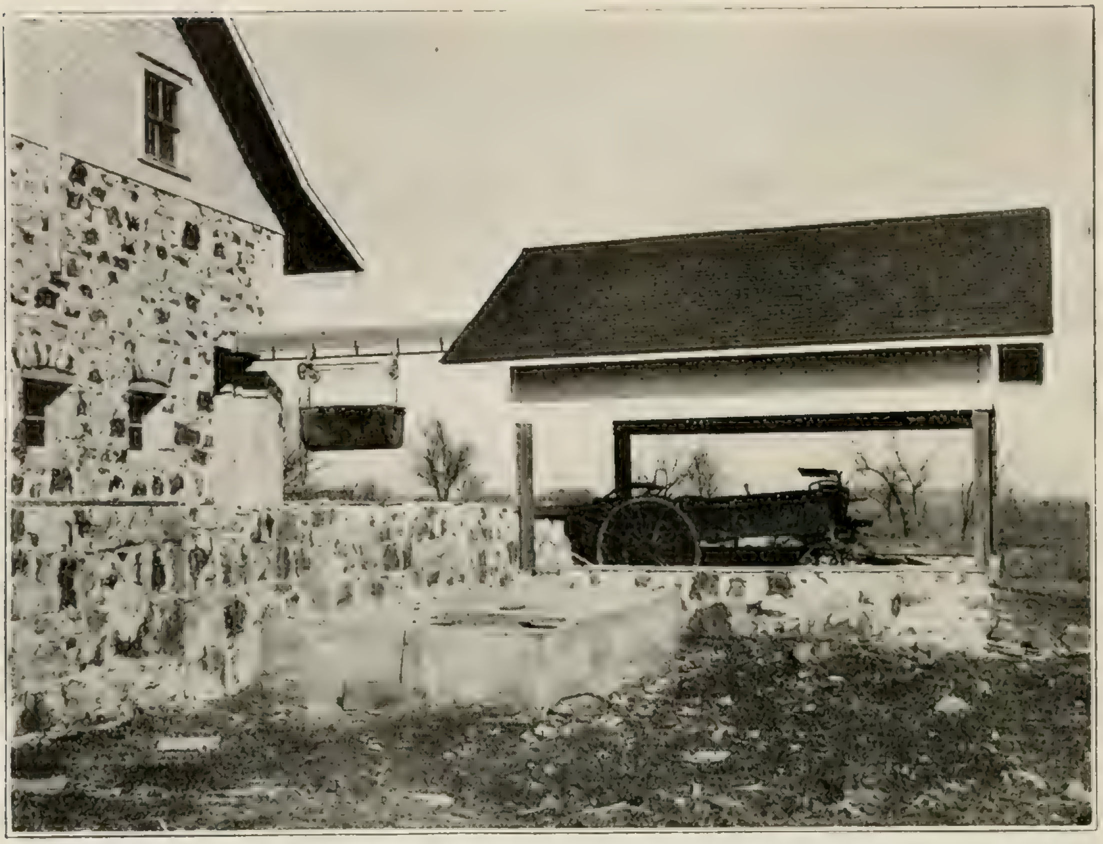
(A. A. Coult, in Journal of Agriculture and Star Farmer.)

Colonel W. H. Phelps of Carthage has proved that dairying in the Ozarks of Southwest Missouri is the quickest way to get big dividends on the money invested if the plant is equipped with modern utensils. His faith in the business is so great that he has invested about $100,000 in live stock, buildings and land in Jasper county, where his Meadowmere Dairy Farm is located.

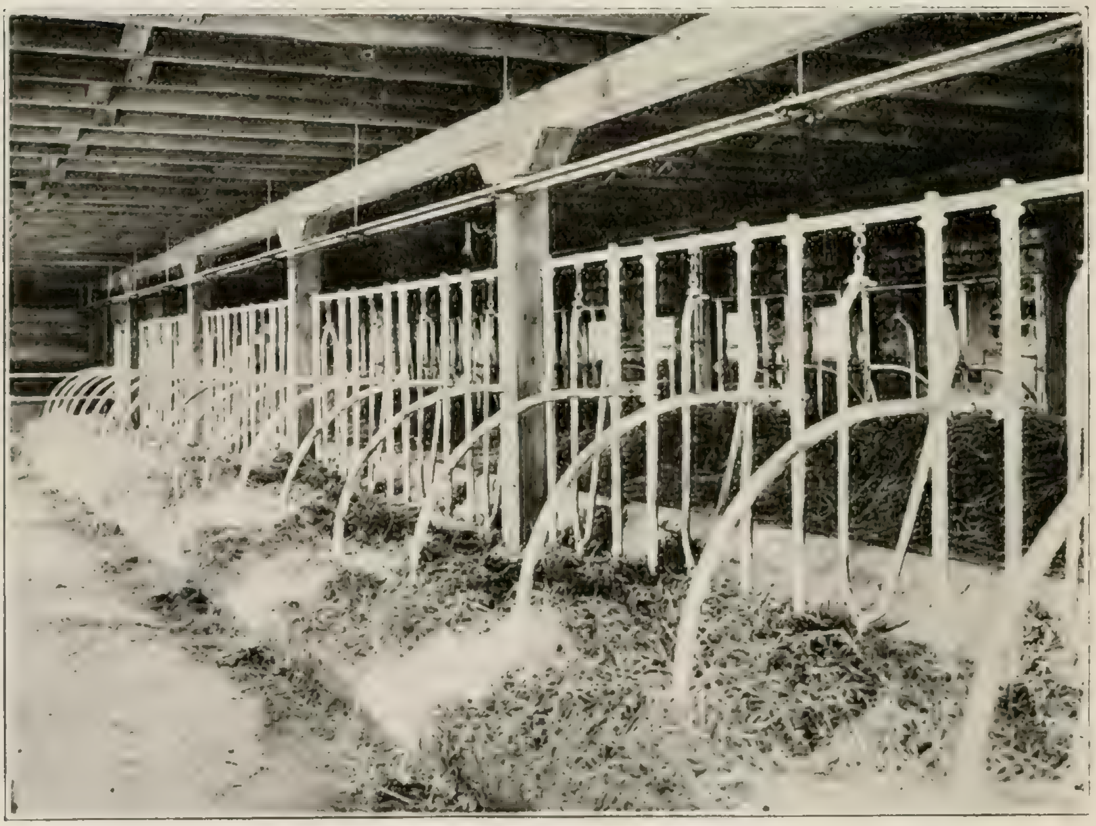
Dairy barn and part of herd owned by Colonel Phelps.

Three years ago Colonel Phelps began to invest in unimproved farm land and was gradually putting it in condition for raising large grain crops without intending to take up the dairy business, until he heard Dairy Commissioner W. P. Cutler give a talk on dairy farming at the Jasper County Corn Show in the fall of 1911. He became impressed with the possibilities of that line of farming and immediately began to make plans for building improved dairy barns and purchasing cream-producing Jersey cows.

He had plenty of rock on the surface of his land to build the walls of the main barn, which is 101 feet long, 42 feet wide, 14 feet to eaves and 33 feet to gable. By putting the rock into the walls he got it off the fields and can grow larger crops. The walls are 18 inches thick set with plenty of windows to give natural light to the cows inside. The entire floor is concrete, with drains behind the cows connecting with sewers which convey the liquid manure to a concrete cistern, twelve feet long, six feet wide and six feet



View showing arrangement of litter carrier; also manure spreader and shed.



Inside view of model dairy barn.

deep, in the ground outside of the barnyard. The inside walls behind the cows are covered with cement to the height of the windows, so that they may be quickly cleaned with water when the floor is washed.

The milking barn has accommodations for 40 cows, 20 on each side, facing each other, with a wide space in front of them for convenience in feeding. A depression in the concrete floor in front of the stanchions serves as a trough when they are watered. The water comes from a bored well 365 feet deep, and is pumped into a large storage tank by windmill power.

As dividends are Colonel Phelps' main excuse for becoming a dairy farmer, and knowing that each cow will respond with larger quantities of milk and cream for the same investment of stock and feed if she is comfortable, he installed stanchoins of metal tubing, the neck pieces working on a swivel, so that she can have the greatest freedom of movement in her stall. One end of a single piece of curved heavy metal tubing fastens to the front rack at about three feet from the floor and the other end fastens to the floor just forward of the drain. Each cow is allowed four feet between these partitions, which gives her plenty of room, but at the same time prevents one cow from crowding another. During the winter the floor is covered with about six inches of clean bedding to make the cows more comfortable.

How building material obtained on the farm is utilized in the improvements at Meadowmere.

At one end of the barn are the office where are kept the daily reports of milk produced by each cow, and the machine room which provides the power for milking the cows, and the cream separator which gathers the cream from the warm milk. Each cow's milk is weighed and recorded each time before being run through the separator, and a sample of the original milk is taken for the butter fat test.

MILKING BY MACHINE.

Colonel Phelps does not like to "pail a cow" any better than you or I, and having satisfied himself that the machines would do the work, installed the milking system. He uses two machines which thoroughly milk 20 cows an hour and absolutely prevent any foreign substance getting into the milk to contaminate it. He is convinced that the cows are producing more milk since the machines were installed, as no milk is ever left in the udder. He says that the cows seem to like the new plan better than the old way of being milked by hand. The machines do not injure a cow's udder if left on for a considerable time after her milk has all been taken, and he has not had a case of sore teat since he started the machines. That is one feature which pleases him very much.

Clearing the land and securing best of building material on the Phelps farm.

A St. Louis dairy, which wants high grade cream for exclusive customers, has offered Colonel Phelps a premium of five cents a pound, butter fat test, for his cream, but as he is interested in the Carthage creamery and wants to help encourage local business, he has declined the offer.

The litter and manure are removed from the barn twice a day in a special litter carrier, which operates on an overhead track behind the cows. The litter box can be lowered to within a few inches of the floor for convenience in loading and quickly raised out of the way when not needed. The track connects across the barnyard with the shed for the manure spreader, and the carrier dumps automatically, eliminating unnecessary handling of the manure between the barn and the field.

Dairy barn and silos at Meadowmere farm.

As silage is an absolute necessity on a dairy farm, Colonel Phelps has erected two silos on the north side of the barn, each connecting with the latter through a ten-foot feed room. One of the silos has a capacity of 160 tons and the other of 125 tons.

The loft over the cows has capacity for 150 tons of loose hay and is equipped with up-to-date hay forks for lifting the hay from the wagon to the loft. The King system of ventilating the milking barn and loft gives plenty of ventilation without causing draughts.

The skimmed milk is fed to the calves and young shoats. The calves are housed in a barn some distance from the milking barn, and after becoming a week old are fastened in stanchions to accustom them to being handled, and to keep them from injuring

One of the special attractions for city visitors at the dairy farm.

each other by crowding at feeding time. Each calf has its individual pail, and the feeder does not have to watch the younger ones to see that they get their share of the feed. The plan also saves the feeder from being assaulted on all sides by a hungry bunch of calves every time he enters the barn with a pail.

The dry cows and young heifers are kept in a barn on another part of the farm until a few days before calving time, when they are brought into the calf barn and placed in large box stalls to await the new arrival. When the calf becomes a few days of age, the mother is transferred to the milking barn and then it joins the colony of skim-milk drinkers.

In the short time the dairy has been in operation it has proved to be a money-maker, and Colonel Phelps is having plans drawn for enlarging the business at least one-half by providing an addition to the present milking barn, and is also considering duplicating the enlarged plant on an adjoining farm.

Three other wealthy men of Jasper county, who have been watching the results at this farm, are considering starting dairy farms in that vicinity as investments for producing large dividends.

MISSOURI CROP REVIEW FOR 1912.

(By W. L. Nelson, Assistant Secretary, Missouri State Board of Agriculture.)

The value of Missouri farm products and live stock for the year 1912 is estimated at more than three-quarters of a billion dollars. Of this stupendous sum $188,129,500 is represented in the ordinary field crops alone

The year 1912 was one characterized by prosperity and plenty and while no records in crop production were broken, the yields generally were good. Favorable harvest weather made it possible for farmers to save all crops in the best of shape. At the close of such a season the Missouri farmer, his fields filled with fatness and bins ready to burst looks with constant and added pride upon the old home place. Pity he gives to the man who, mistaking a mirage in the desert for the promised land, went away to some sun-scorched or snow-clad country, when he might have remained in Missouri.

Corn—The Missouri corn crop for the year 1912 is approximately a quarter of a billion bushels—243,042,951. This exceeds the corn crop of 1911 by more than 50,000,000 bushels. The farm value of the crop averages almost one million dollars to the county, while the commercial value considerably exceeds this. The value of the corn grown in Missouri this year, figured at the average state farm price of 43 cents per bushel is $104,517,350. The average yield for the 7,610,988 acres is 31.9 bushels—practically 32 bushels per acre. The yield by sections is: Northeast, 34; Northwest, 35.1; Central, 36; Southwest, 24.5; Southeast, 31.9. The county making the best yield per acre was Cooper, in the Central section, with 45 bushels. St. Charles county, with 40 bushels, is first in the Northeast section. Lafayette, with 44, and Carroll, with 43, lead in the Northwest section. Johnson, with a 38-bushel average, leads in the Southwest section, while Ste. Genevieve, with 38 bushels to the acre and Gasconade and Perry each with 36 bushels average, lead in the Southeast section.

Overflows in the fabulously fertile districts of Southeast Missouri lowered the yield per acre in a number of counties, while unfavorable weather conditions for a short time during the growing season cut down the yield in the great corn counties of Northwest Missouri. Still Atchison, Nodaway, Pettis, Saline and Johnson each grew more than 5,000,000 bushels of corn, while Audrain.

Carroll, Harrison, Lafayette, Livingston, Callaway and Cass each produced more than 4,000,000 bushels. These twelve counties together grew one-fourth as much corn as the entire state of Indiana, practically the same as either Michigan or Wisconsin, more than one-fourth as much as either Kansas or Nebraska, one-third as much as the entire state of Texas, one-half as much as Oklahoma, and more than all Arkansas. The combined output of corn grown in twenty states of the Union is less than that of these dozen Missouri counties. One Missouri county alone—Saline—grew 6,413,364 bushels of corn. But two states in the Union—Iowa and Illinois—grew as much corn in 1912 as did Missouri. Kansas with three-quarters of a million acres less in corn, fell almost fifty million bushels short of the Missouri total, so much better is our yield per acre.

Of the Missouri corn crop for the present year 72 per cent is now in the crib, so favorable has been the season. The quality of the corn is excellent, being 87 for the State.

Wheat—The winter of 1911-12 was an unfavorable one for wheat in Missouri. In many counties, especially in the Northeast section of the State, much wheat was winter killed, so that the acreage harvested was only about 75 per cent of that seeded. The crop for the present year, harvested from 1,708,999 acres, totaled 21,546,720 bushels, worth at 90.2 cents per bushels, $19.411,869. The State yield per acre was 12.6 bushels, with section yields as follows: Northeast, 10.6; Northwest, 19.5; Central, 13.1; Southwest, 11; Southeast, 8.7. Counties producing more than half a million bushels each are: Lincoln, 579,612; St. Charles, 640,926; Buchanan, 542,476; Carroll 845,964; Jackson, 591,591; Lafayette, 863,640; Platte, 908,293; Cooper, 625,456; Saline, 869,248; Franklin, 572,526; St. Louis, 504,427.

The present wheat acreage is 2,023,330. This is but 93.2 per cent of the original acreage seeded during the fall of 1911, but is considerably larger than the acreage actually harvested during the year 1912. The present wheat crop as compared with the acreage seeded one year ago is as follows: Northeast, 96.7 per cent; Northwest, 99.4; Central, 91.4; Southwest, 89.3; Southeast, 90.8. The condition of the growing crop is 91.

Oats—The Missouri oat crop for the year 1912 was a good one. The total yield from 940,314 acres was 29,488,490, an average of 32.8 bushels per acre. The oat crop, at 32.8 cents per bushel, represents a value of $9,632,205, if sold on the market. If fed to well-bred stock, for which Missouri is famed, the value of this same crop will be much more. Audrain county, with 1,135,650 bushels, was first in oat production. Other counties producing more than half a million bushels are: Clark, 800,421; Lewis, 547,100; Monroe, 699,048; Pike, 760,190; Ralls, 564,102; Scotland, 592,080; Shelby, 801,382; Atchison, 528,108; Carroll 534,840; Clinton, 572,934; Harrison, 566,825; Nodaway, 696,256; Boone, 507,714; Callaway, 576,197; Chariton, 544,401; Cooper, 520,085; Pettis, 538,725; Cass, 520,256; Henry, 643,980; Johnson, 566,026.

Tame Hay and Forage—The tame hay and forage crop grown in Missouri totals 3,333,862 tons for the year 1912, and represents a value of $33,232,119. In 1911 the yield was but 1,968,332 tons, or .83 tons per acre as compared with 1.3 tons this year, when the acreage was 2,414,889.

Grass and Grass Seed—The preceding figures do not include the value of bluegrass, of which Missouri is said to have more than all the states north of her northern border or south of her southern border. While this bluegrass, fortunately, can not be baled and shipped to other states to add to their fertility and to lessen ours, it is one of our greatest sources of wealth. Nature generously gave this greatest of all grasses to Missouri to hold in trust for all time. In turn, it feeds the millions of animals that graze over it and with these constantly contributes to the fertility of the soil. The Missouri grass seed crop for the present year is the greatest in the history of the State.

Prairie Hay—Prairie hay represents a value of $1,400,701. The yield harvested from 142,730 acres totals 167,098 tons, the average yield per acre being slightly less than a ton—.85 for the State. More than half the prairie hay in Missouri is grown in the Southwest section of the State.

OTHER CROPS.

Acreage, yield and value of other crops entering into the total value of $188,129,500 follow:

Flax—The total yield from 10,153 acres is 71,071 bushels, valued at $113,714.

Rye—Acreage, 7,435; yield, 102,603; value, $84,134.

Buckwheat—Acreage, 1,203; yield, 30,075 bushels; value, $29,173.

Barley—Acreage, 729; yield, 20,412 bushels; value, $13,268.

Broom corn—Acreage, 3,433; yield, 1,750,830 pounds; value $69,125.

Cotton—Acreage, 59,805; yield, 25,357,320 pounds; value $2,916,092.

Potatoes—Acreage, 51,233; yield, 4,149,873 bushels; value $2,614,420.

Tobacco—Acreage, 5,174; yield, 4,894,600 pounds; value $587,352.

Sorghum seed—Acreage, 19,470; yield, 408,870 bushels; value, $396,604.

Sorghum syrup—Acreage, 19,470; yield, 1,693,890 gallons; value, $880,823.

Clover seed—Acreage threshed, 14,854; yield, 29,700 bushels; value, $264,400.

Timothy seed—Acreage threshed, 18,609; yield, 74,436; value $171,200.

Kafir corn, millet, cowpeas, castor beans, etc., $4,440,000.

Miscellaneous vegetables, $7,325,000.

With yields of all crops aggregating more than 60,000,000 bushels and almost 2,000,000 tons more than in 1911, the value of Missouri field crops, owing to reduced prices, is practically the same as last year. The one chance that the Missouri farmer has to realize increased returns from his grain and forage is to "market it on foot"—to feed it to live stock.

Live Stock—A general shortage of live stock is reported throughout the entire State. Number of hogs of all ages is but 70 per cent of normal, and the number on feed but 66 per cent. The decrease in numbers is due largely to losses from cholera. Few cattle are being fed, owing in part to the scarcity of hogs. Cattle on feed represent but 67 per cent of the usual number.

The figures given in this report are based on reports from more than 500 crop reporters covering the 114 counties of the State.

SUMMARY OF MONTHLY REPORTS.

Following are summaries of the monthly crop reports of the Missouri State Board of Agriculture, for the year 1912:

April 6—The winter of 1911-12 was one of unusual severity. Some correspondents report a total fall of snow of more than 5 feet in several sections of the State. A minimum temperature of 20 degrees below zero was recorded. March was a cold and wet month, so that practically no farming was done. The total rainfall for the month was 6.23 inches at Columbia, as compared with 1.54 inches in March, 1911. The normal rainfall for the month of March is 3.03 inches. The Columbia station reports but 7 clear days during March, 1912. Correspondents report no potatoes planted and no gardens made. The condition of wheat for the State is placed at 78. Much wheat is apparently winter killed. The present condition of wheat by sections is: Northeast, 73; Northwest, 92; Central, 79; Southwest, 74; Southeast, 74. The seeding of the oat crop is the latest in the history of the State, according to the records of this office. On April 1, less than 1 per cent—.91—had been seeded. Practically no spring plowing has been done for corn. The land now plowed for this crop amounts to but 10 per cent. It is estimated that but 18.8 per cent of last year's corn crop is still on Missouri farms. Ninety per cent of the correspondents report a scarcity of good seed corn. The condition of clover is placed at 66, and of timothy at 83. Practically all of the crop seeded a year ago was lost. The condition of alfalfa is placed at 79; rye, 83.

May 4—Continued cool and rainy weather has retarded all farm work, so that it is now from ten days to three weeks later than normal. The total rainfall for the month of April was 5.34 inches as compared with normal rainfall of 3.70 inches. However, this is less than the rainfall for April, 1911, which was 5.65 inches. The temperature for the month averaged 55, the highest being 80 and the lowest 34. A light frost was reported April 23. Soil condition is 75.4 for the State. Land plowed for corn is placed at 26 per cent. One year ago it was 65 per cent. The part of the corn crop planted taking the State as a whole is but 3.5 per cent. The hoped for improvement in wheat has failed to be realized, and the outlook for the State is most discouraging. The condition of wheat for the State is 63.4, as compared with 78.4 one month ago. By sections present condition of wheat is: Northeast, 46; Northwest, 71; Central, 63; Southwest, 67; Southeast, 70. The condition in the Northeast section is the worst in the State and in some counties is probably the worst on record. Abandoned wheat acreage for the State is estimated at 26 per cent. The part of the oat crop now in is placed at 86.4 per cent. Owing to the late season and to the high price of seed indications are that the present acreage seeded to oats will be but 76 per cent as much as it was in 1911. The condition of clover for the State is 73, timothy 86, alfalfa 74.

A good stand of new clover and timothy is reported, but the acreage is decreased owing to the high price of seed.

June 1—The end of the month of May finds Missouri farmers much more optimistic than a month ago. Splendid progress has been made with farm work. One week of cool weather checked corn somewhat but in some sections apparently aided wheat slightly. The per cent of corn planted is placed at 81, while one month ago it was but 3.5. By sections planting shows: Northeast, 78; Northwest, 89; Central, 84; Southwest, 83; Southeast, 71. Stand is estimated at 82. Such re-planting as is necessary this year is attributed to poor seed and to hard rains following planting. Condition of growing crop is 87. Soil condition is 88. Indications are for an increase of 3 per cent in acreage as compared with last year's crop. Wheat condition is practically the same as one month ago—now 64.2; then 63.4. By sections condition is: Northeast, 51; Northwest, 76; Central, 66; Southwest, 61; Southeast, 67. Condition of oats is estimated at 83.4. By sections it is: Northeast, 87; Northwest, 85; Central, 85; Southwest, 80; Southeast, 80. Acreage is estimated at 79.4 as compared with 1911. Clover condition is 79, timothy 85, rye, 84, barley 89, alfalfa 94, pastures 92. Preliminary estimate of tobacco acreage places it at 87, preliminary for cotton 70. Berries and small fruit show 73 per cent, with a record strawberry crop. The peach crop is practically a failure, state estimate being 6 per cent.

July 6—Splendid is the showing made by practically all crops, especially during the latter part of June. The first half of the month was cool for corn, but weather conditions as a whole have been good. Corn is making a remarkable growth. The condition for the State is 85.6. Stand as compared with normal is given as 89.6. Wheat made marked improvement during the last 30 days immediately preceding harvest. Final reports on condition show 75.8. It now develops that it would have paid to let stand some wheat that was plowed up. Harvest is later than usual, but weather has been favorable. It is estimated that 51 per cent of the wheat had been cut by July 1. Quality of new grain is 91.6. A preliminary estimate as to yield places it at 12.4 bushels. Where a month ago many fields of oats gave little promise of being tall enough to harvest with binder there is now a bountiful crop. Condition is 93.8. Meadows are much better than seemed possible a month ago. Condition of timothy is 87; clover, 82.2; alfalfa, 88.8; pastures, 91.2; cotton, 64; flax, 89.5; tobacco, 87.4; broom corn, 87;

potatoes, 93.8. The outlook for a general fruit crop, with practically no peaches, is 76.6.

August 3—Conditions throughout the State are generally encouraging. Corn fields present a dark rich green appearance. The condition of corn for the State is 84.6. The crop has been well cultivated and practically none has been lost by overflows. The wheat yield for the State is estimated at 12.7 bushels per acre, or slightly more than the preliminary estimate of 12.4 bushels. A few yields of 45 to 50 bushels per acre are reported. The preliminary estimate on yield of oats is 30 bushels per acre. Some reports are from 60 to 75 bushels per acre. Meadows are surpassing all early expectations. Preliminary estimates show yield of timothy hay 1.25 tons per acre; clover 1.2; first cutting of alfalfa 1.4; mixed hay 1.4; prairie hay 1.1. Indications are for a record harvest of timothy seed. An unusual amount of blue grass and other grass seeds have been saved. Condition of pasture is 77, the State average being reduced by the low condition of 56 for the Northwest section. Fruit condition is 73; broom corn, 81; flax, 77; melons, 73; tobacco, 82; cotton, 69; cowpeas, 85.

September 7—The condition of corn bids fair to make a good yield, if not a record crop, being 86.8 for the State. This is the highest end-of-August average on record in this office with the exception of three years—1902, 108; 1905, 95; 1906, 87.8. By sections, corn conditions show: Northeast, 94; Northwest, 91; Central, 91; Southwest, 71; Southeast, 87. Corn cutting is later than usual, and the indications are that comparatively little corn will be cut. Lack of rainfall in some sections has retarded the plowing of ground for wheat. According to reports but 44 per cent of the wheat ground has been plowed. Indications are that only about 91 per cent as much ground will be seeded to wheat as was seeded last fall. In many localities threshing has been delayed, and at this time it is estimated that 17.6 per cent of the 1912 wheat crop is yet in the field. A later estimate of the yield of oats places it at 30.6 bushels per acre. The timothy seed crop is estimated at 118 per cent as compared with an average year. Yield of rye for the State is placed at 13.8 bushels per acre; buckwheat, 25 bushels; barley, 28 bushels; flax, 7. Condition of pastures is 76.4; cotton, 84; tobacco, 87.5; cowpeas, 82.2.

October 1—The condition of corn for the State is 86.4. This is the highest since 1906. By sections present corn conditions show: Northeast, 95; Northwest, 92; Central, 91; Southwest, 73; Southeast, 81. The quality of the new crop is much above the average being 87.4. It is estimated that 80 per cent of the crop is safe from frost. An early estimate, subject to radical revision, places the probable yield of corn at 33 bushels per acre. The probable selling price for corn is estimated at 51 cents per bushel. The surplus for shipment is 15 per cent, practically all of which will be between counties and to feeding centers within the State. The part of the corn crop cut is placed at 34 per cent. A considerable part of the crop goes into silos. However, this will not exceed 5 per cent. Wheat sowing is later than usual. But 45 per cent of the crop has been seeded, and there is yet some ground to break. Recent rains have been a great benefit and the work is now progressing nicely. Soil condition is placed at 88. The wheat acreage will be considerably below the State average. It is now estimated at 86 but may exceed this. The timothy acreage threshed compared with last year is roughly estimated at 155 per cent with an average yield of about 4 bushels per acre. A few fields are reported to have made as much as 10 bushels per acre. Present condition of pastures is 72; tobacco, 90; cotton, 67. There is considerable complaint to the effect that cowpeas have not done well. However, summing up the crop situation as a whole the harvest promises plenty.

December 14—The December report is included in the body of this bulletin.

Monthly crop reports are issued on the first Saturday in April, May, June, July, August, September and October. The annual report for the year is issued on the second Saturday in December.

TEMPERATURE AND PRECIPITATION FOR YEAR 1912.

The following records of temperature and precipitation, by months, for the year 1912, were recorded at the Columbia Station, United States Department of Agriculture Weather Bureau, George Reeder, section director.

January—Temperature: Highest, 51 degrees on 23rd; lowest, 20 degrees on 7th; mean, 17 degrees. Precipitation, 0.25 inches. Deficiency of precipitation for month, 1.98 inches.

February—Temperature: Highest, 55 degrees on 18th; lowest, 11 degrees on the 4th; mean, 27 degrees. Precipitation, 1.74 inches. Deficiency of precipitation for month, 3.6 inches.

March—Temperature: Highest, 72 degrees on 31st; lowest, 11 degrees on the 9th; mean, 33 degrees. Precipitation, 6.23 inches. Excess of precipitation for month, 3.20 inches.

April—Temperature: Highest, 80 degrees on 5th; lowest, 34 degrees on 17th; mean, 55 degrees. Precipitation, 5.34 inches. Excess of precipitation for month, 1.64 inches.

May—Temperature: Highest, 92 degrees on 23rd; lowest, 41 degrees on 17th; mean, 68 degrees. Precipitation, 3.25 inches. Deficiency of precipitation for month, 1.6 inches.

June—Temperature: Highest, 89 degrees on 26th; lowest, 48 degrees on 19th; mean, 69 degrees. Precipitation, 3.50 inches. Deficiency of precipitation for month, 0.88 inches.

July—Temperature: Highest, 96 degrees on 24th; lowest, 60 degrees on 19th; mean, 79 degrees. Precipitation, 1.88 inches. Deficiency of precipitation for month, 1.77 inches.

August—Temperature: Highest, 97 degrees on 28th; lowest, 51 degrees on 4th; mean, 76 degrees. Precipitation, 4.91 inches. Excess of precipitation for month, 1.87 inches.

September—Temperature: Highest, 98 degrees on 3rd; lowest, 32 degrees on 30th; mean, 68 degrees. Precipitation, 3.55 inches. Excess of precipitation for month, 0.70 inches.

October—Temperature: Highest, 89 degrees on 9th, lowest, 30 degrees on 23rd; mean, 58 degrees. Precipitation, 4.07 inches. Excess of precipitation for month, 1.65 inches.

November—Temperature: Highest, 75 degrees on 10th; lowest, 19 degrees on 25th; mean, 45 degrees. Precipitation, 1.33 inches. Deficiency of precipitation for month, 0.98 inches.

December—Temperature: Highest, 64 degrees on 1st; lowest, 9 degrees on 12th; mean, 36 degrees. Precipitation, 0.40 inches. Deficiency of precipitation for month, 1.61 inches.

WHEAT AND OATS.

Table giving acreage, average yield per acre, and total product of wheat and oats, by counties, for the year 1912.

County.	Wheat.			Oats.		
	Acreage.	Average yield per acre, bushels.	Total yield per county, bushels.	Acres.	Average yield per acre, bushels.	Total yield per county, bushels.
State	1,708,999	12.6	21,546,720	940,314	31.3	29,488,490
County.						
Adair	556	13	7,228	12,820	27	346,140
Audrain	4,887	9	43,983	45,402	25	1,135,050
Andrew	10,594	23	243,662	6,164	35	215,740
Atchison	10,697	20	213,940	18,861	28	528,108
Barry	23,338	9	210,042	9,668	23	222,364
Barton	9,330	9	83,970	8,101	16	129,616
Bates	28,260	14	395,640	14,082	22	309,804
Benton	9,676	13	125,788	8,276	30	248,280
Bollinger	8,802	9	79,218	2,676	27	72,252
Boone	17,088	11	187,968	13,722	37	507,714
Buchanan	24,658	22	542,476	6,499	37	240,463
Butler	1,012	13	13,156	1,016	18	18,288
Caldwell	3,931	16	62,896	14,215	32	454,880
Callaway	20,697	12	248,364	18,587	31	576,197
Camden	4,428	12	53,136	843	22	18,546
Cape Girardeau	39,498	6	236,988	7,543	32	241,376
Carroll	46,998	18	845,964	17,828	30	534,840
Carter	635	9	5,715	418	24	10,032
Cass	19,024	17	323,408	16,258	32	520,256
Cedar	11,793	9	106,137	3,925	24	94,200
Chariton	26,382	18	474,876	13,959	39	544,401
Christian	14,296	9	128,664	6,165	24	147,960
Clark	4,054	11	44,594	21,633	37	800,421
Clay	11,323	22	249,106	6,219	37	230,103
Clinton	5,193	21	109,042	16,851	34	572,934
Cole	17,202	11	189,222	4,158	34	141,372
Cooper	39,091	16	625,456	12,685	41	520,085
Crawford	9,368	9	84,312	1,779	20	35,580
Dade	15,998	11	175,978	5,987	26	155,662
Dallas	9,141	8	73,128	2,300	24	55,200
Daviess	8,178	14	114,492	11,174	34	379,916
DeKalb	7,568	23	174,064	11,571	30	347,130
Dent	11,295	8	90,360	1,286	24	30,864
Douglas	4,850	7	33,950	1,723	15	25,845
Dunklin	797	11	8,767	837	30	25,110
Franklin	63,614	9	572,526	5,140	27	138,780

WHEAT AND OATS.—Continued.

County.	Wheat.			Oats.		
	Acreage.	Average yield per acre, bushels.	Total yield per county, bushels.	Acres.	Average yield per acre, bushels.	Total yield per county, bushels.
Gasconade	21,789	8	174,312	3,000	23	69,000
Gentry	5,426	20	108,520	7,693	33	253,869
Greene	26,297	10	262,970	11,131	30	333,930
Grundy	2,912	22	64,064	6,763	37	250,231
Harrison	6,552	20	131,040	16,195	35	566,825
Henry	15,580	16	249,280	21,466	30	643,980
Hickory	5,798	10	57,980	2,688	23	61,824
Holt	12,774	23	293,802	10,338	33	341,154
Howard	18,320	11	201,520	4,828	38	183,464
Howell	3,471	11	38,181	2,259	24	54,216
Iron	2,324	11	25,564	1,070	27	28,890
Jackson	28,171	21	591,591	11.271	36	405,756
Jasper	34,820	12	417,840	11,885	33	392,205
Jefferson	24,353	12	292,236	4,043	33	133,419
Johnson	27,245	17	463,165	15,298	37	566,026
Knox	596	8	4,768	21,884	25	547,100
Laclede	7,563	9	68,067	2,624	22	57,728
Lafayette	57,576	15	863,640	8,891	33	293,403
Lawrence	46,682	8	373,456	10,308	29	298,932
Lewis	4,040	8	32,320	17,139	29	497,031
Lincoln	52,692	11	579,612	11,828	28	331,184
Linn	4,357	14	60,998	11,615	35	406,525
Livingston	9,587	16	153,392	11,181	40	447,240
McDonald	7,734	7	54,138	3,904	20	78,080
Macon	3,523	15	52,845	13,008	38	494,304
Madison	4,796	9	43,164	1,222	30	36,660
Maries	11,740	8	93,920	1,992	20	39,840
Marion	5,983	8	47,864	8,847	45	398,115
Mercer	3,358	15	50,370	5,173	32	165,536
Miller	17,175	10	171,750	3,094	31	95,914
Mississippi	18,544	7	129,808	262	25	6,550
Moniteau	24,124	16	385,984	10,904	35	381,640
Monroe	4,702	13	61,126	19,418	36	699,048
Montgomery	19,461	12	233,532	17,322	21	363,762
Morgan	17,343	12	208,116	6,189	29	179,481
New Madrid	8,566	9	77,094	181	27	4,887
Newton	18,350	8	146,800	9,180	24	220,320
Nodaway	22,347	22	491,634	21,758	32	696,256
Oregon	6,286	11	69,146	2,805	27	75,735
Osage	29,914	12	358,968	1,838	31	56,978
Ozark	5,377	8	43,016	1,933	25	48,325
Pemiscot	2,459	10	24,590	109	30	3,270
Perry	18,354	6	110,124	4,543	35	159,005
Pettis	27,459	16	439,354	16,325	33	538,725

WHEAT AND OATS.—Continued.

County.	Wheat.			Oats.		
	Acreage.	Average yield per acre, bushels.	Total yield per county, bushels.	Acres.	Average yield per acre, bushels.	Total yield per county, bushels.
Phelps	8,369	10	83,690	1,752	26	45,552
Pike	17,784	8	142,272	20,005	38	760,190
Platte	39,491	23	908,293	7,231	33	238,623
Polk	17,558	9	158,022	6,781	25	169,525
Pulaski	3,202	9	28,818	965	22	21,230
Putnam	1,539	14	21,546	9,687	39	377,793
Ralls	6,543	8	52,344	15,246	37	564,102
Randolph	4,266	11	46,926	12,439	36	447,804
Ray	20,896	17	355,232	11,543	32	369,376
Reynolds	716	9	6,444	577	28	16,156
Ripley	1,749	8	14,352	1,703	18	30,654
St. Charles	58,266	11	640,926	5,270	25	131,750
St. Clair	8,792	12	105,504	8,349	25	208,725
Ste. Genevieve	17,063	6	102,378	2,556	31	79,236
St. Francis	8,068	10	80,680	2,029	23	46,667
St. Louis	45,857	11	504,427	1,975	33	65,175
Saline	54,328	16	869,248	7,514	33	247,962
Schuyler	2,453	13	31,889	6,753	36	243,108
Scotland	1,185	11	13,035	14,802	40	592,080
Scott	41,362	6	248,172	1,307	25	32,675
Shannon	1,251	9	11,259	681	21	14,301
Shelby	3,346	10	33,460	21,089	38	801,382
Stoddard	13,168	13	171,184	764	26	198,718
Stone	2,811	7	19,677	3,998	20	79,960
Sullivan	649	13	8,437	7,029	35	246,015
Taney	4,841	9	43,569	1,714	20	34,280
Texas	14,152	9	127,368	2,592	25	64,800
Vernon	9,047	12	108,564	10,584	23	243,432
Warren	29,289	10	292,890	5,841	28	163,548
Washington	10,792	12	129,504	1,849	22	40,678
Wayne	2,987	7	20,909	1,362	15	20,430
Webster	6,076	10	60,760	4,525	28	126,700
Worth	3,513	26	91,338	6,294	28	176,232
Wright	4,818	7	33,726	1,853	27	50,031

CORN, HAY AND FORAGE.

Table giving acreage, average yield per acre, and total product of corn and hay and forage, by counties for the year 1912.

County.	Corn.			Hay and forage.	
	Acres planted.	Average yield per acre, bushels.	Total yield per county, bushels.	Acres.	Total yield per county, tons.
State	7,610,988	31.9	243,042,951	2,414,889	3,333,862
County.					
Adair	75,672	35	2,648,520	46,187	50,805
Audrain	143,581	33	4,738,173	26,995	33,743
Andrew	112,129	34	3,812,386	25,282	31,502
Atchison	156,027	33	5,148,891	25,578	43,482
Barry	49,921	18	898,578	12,671	19,006
Barton	99,686	19	1,894,034	5,460	8,190
Bates	158,889	24	3,813,336	44,415	57,739
Benton	72,050	31	2,233,550	20,082	34,139
Bollinger	30,438	25	760,950	17,350	17,350
Boone	104,578	37	3,869,386	31,072	52,822
Buchanan	65,256	41	2,675,496	15,260	24,416
Butler	30,309	25	757,725	10,304	11,334
Caldwell	101,831	34	3,462,254	22,462	31,446
Callaway	119,264	38	4,532,032	45,365	90,730
Camden	32,248	30	967,440	12,912	19,368
Cape Girardeau	46,699	34	1,587,766	4,775	7,640
Carroll	111,837	43	4,808,991	38,472	67,326
Carter	9,812	29	284,548	4,354	5,224
Cass	130,847	32	4,187,104	41,594	54,072
Cedar	67,208	25	1,680,200	12,902	14,192
Chariton	104,041	35	3,641,435	27,497	35,746
Christian	42,286	29	1,226,294	7,020	8,424
Clark	93,030	36	3,349,080	34,826	45,273
Clay	80,169	39	3,126,591	10,020	12,525
Clinton	91,411	37	3,382,207	19,485	24,356
Cole	30,910	40	1,236,400	10,964	13,156
Cooper	84,196	45	3,788,820	19,482	38,964
Crawford	25,440	30	763,200	13,294	18,611
Dade	75,985	21	1,595,685	7,905	11,857
Dallas	39,141	23	900,243	9,633	10,596
Daviess	120,367	30	3,611,010	23,167	25,483
De Kalb	85,116	29	2,468,364	20,596	24,715
Dent	20,911	26	543,686	9,750	11,212
Douglas	40,924	18	736,632	13,041	13,041
Dunklin	55,710	28	1,559,880	9,202	11,502
Franklin	57,820	34	1,965,880	24,794	35,951
Gasconade	24,842	36	894,312	11,558	23,116
Gentry	101,408	30	3,042,240	34,662	38,128

CORN, HAY AND FORAGE—Continued

County.	Corn.			Hay and forage.	
	Acres planted.	Average yield per acre, bushels.	Total yield per county, bushels.	Acres.	Total yield per county, tons.
Greene	77,063	30	2,211,890	17,923	23,299
Grundy	78,314	35	2,740,990	34,347	34,347
Harrison	136,137	33	4,492,521	47,741	59,676
Henry	136,065	20	2,721,300	30,212	54,381
Hickory	31,079	19	590,501	13,340	16,675
Holt	104,370	29	3,026,730	11,706	12,876
Howard	59,233	42	2,487,786	16,238	27,604
Howell	47,068	20	941,360	20,522	28,730
Iron	13,478	23	309,994	7,697	9,621
Jackson	77,382	42	3,250,044	22,967	34,450
Jasper	81,515	21	1,711,815	9,226	13,839
Jefferson	34,056	35	1,191,960	16,532	29,757
Johnson	136,861	38	5,200,718	48,832	70,806
Knox	78,309	30	2,349,270	29,175	29,175
Laclede	43,354	26	1,127,204	16,779	23,490
Lafayette	94,020	44	4,136,880	28,625	54,387
Lawrence	55,289	25	1,382,225	14,641	20,497
Lewis	73,260	36	2,637,360	31,640	34,804
Lincoln	50,071	37	1,852,627	15,372	29,206
Linn	83,602	35	2,926,070	73,018	80,319
Livingston	125,883	36	4,531,788	30,136	48,217
McDonald	29,947	24	718,728	8,110	12,165
Macon	118,905	32	3,804,960	69,362	104,043
Madison	18,758	30	562,740	7,454	13,417
Maries	25,321	31	784,951	10,476	15,714
Marion	58,459	36	2,104,524	16,621	24,931
Mercer	72,719	35	2,545,165	52,346	52,346
Miller	39,264	30	1,177,920	22,513	29,266
Mississippi	49,501	30	1,485,030	4,985	6,480
Moniteau	55,605	36	2,001,780	22,028	33,042
Monroe	114,151	35	3,995,285	46,879	65,630
Montgomery	71,180	29	2,064,220	14,356	22,969
Morgan	44,805	31	1,388,955	14,744	23,590
New Madrid	58,051	30	1,741,530	6,446	7,735
Newton	64,975	16	1,039,600	7,420	11,130
Nodaway	165,024	33	5,445,792	50,985	86,674
Oregon	33,406	21	701,526	10,111	12,133
Osage	30,578	36	1,100,808	15,232	22,848
Ozark	22,842	22	502,524	7,710	9,637
Pemiscot	30,240	32	967,680	2,816	3,520
Perry	33,874	36	1,219,464	9,578	13,409
Pettis	123,529	43	5,311,747	27,815	44,504
Phelps	28,537	28	799,036	22,480	29,224
Pike	86,866	37	3,214,042	23,930	35,895
Platte	62,478	40	2,499,120	13,037	18,251
Polk	81,577	25	2,039,425	9,937	14,905

CORN, HAY AND FORAGE.—Continued.

County.	Corn.			Hay and forage.	
	Acres planted.	Average yield per acre, bushels.	Total yield per county, tons.	Acres.	Total yield per county, tons.
Pulaski	25,993	27	701,811	11,326	14,157
Putnam	65,340	33	456,220	69,979	76,976
Ralls	61,641	32	1,972,512	16,554	28,969
Randolph	56,294	37	2,082,878	32,785	49,177
Ray	107,764	37	3,987,268	23,754	28,504
Reynolds	19,149	23	440,427	6,717	7,388
Ripley	24,448	25	611,200	10,911	15,275
St. Charles	47,061	40	1,882,440	20,163	30,244
St. Clair	85,115	21	1,787,415	15,135	24,216
St. Francois	15,642	30	469,260	5,727	8,590
Ste. Genevieve	21,255	38	807,690	5,266	10,005
St. Louis	39,565	30	1,186,950	22,056	33,084
Saline	149,148	43	6,413,364	32,394	51,830
Schuyler	42,224	35	1,477,840	23,464	28,156
Scotland	69,478	36	2,501,208	26,232	32,790
Scott	45,657	34	1,552,338	10,064	13,083
Shannon	19,306	22	424,732	8,428	9,270
Shelby	93,236	30	2,797,080	37,155	52,017
Stoddard	57,989	30	1,739,670	22,799	25,078
Stone	27,198	21	571,158	4,510	5,863
Sullivan	80,305	33	2,650,065	70,503	77,553
Taney	20,610	23	474,030	6,283	6,283
Texas	51,673	21	1,085,133	17,615	19,376
Vernon	152,229	25	3,805,725	29,968	52,444
Warren	29,658	35	1,038,030	8,170	13,072
Washington	25,722	32	823,104	9,304	11,164
Wayne	34,040	27	919,080	12,633	12,633
Webster	33,951	25	848,775	9,368	12,178
Worth	43,789	32	1,401,248	19,029	33,300
Wright	36,518	22	803,396	22,169	24,385

SUMMARY OF THE ACREAGE, YIELD AND VALUE OF FARM CROPS FOR THE YEAR 1912 FOR THE STATE AND BY SECTIONS.

CORN.

Section.	Acres planted.	Average yield per acre, bushels.	Total yield, bushels.	Total value.
Northeast	1,536,029	34	52,159,526	$21,777,255
Northwest	2,093,431	35.1	73,595,976	29,853,879
Central	1,299,168	36	47,138,047	20,562,392
Southwest	1,707,501	24.5	41,850,587	19,131,342
Southeast	974,859	29	28,298,815	13,192,482
State	7,610,988	31.9	243,042,951	$104,517,350

WHEAT.

Section.	Acres sown.	Acres harvested.	Average yield per acre, bushels.	Total yield, bushels.	Total value.
Northeast	366,641	225,905	10.6	2,405,669	$2,200,906
Northwest	401,737	341,743	19.5	6,658,558	5,966,693
Central	482,703	373,306	13.1	4,992,279	4,470,817
Southwest	434,109	362,917	11	3,998,276	3,519,228
Southeast	485,053	403,128	8.7	3,491,938	3,284,225
State	2,170,243	1,708,999	12.6	21,546,720	$19,441,869

OATS.

Section.	Acres harvested.	Average yield per acre, bushels.	Total yield, bushels.	Total value.
Northeast	305,638	32	9,898,648	$2,915,039
Northwest	233,713	32.9	7,708,615	2,439,789
Central	147,682	34	5,027,665	1,629,331
Southwest	188,818	27	5,100,158	1,926,352
Southeast	64,463	27.2	1,753,404	721,694
State	940,314	31.3	29,488,490	$9,632,205

TAME HAY AND FORAGE.

Section.	Acres harvested.	Average yield per acre, tons.	Total yield, tons.	Total value.
Northeast	700,581	1.4	896,570	$8,240,333
Northwest	569,657	1.35	786,407	7,696,197
Central	435,157	1.5	676,648	6,458,068
Southwest	386,452	1.4	542,549	5,256,207
Southeast	323,042	1.3	431,688	5,581,314
State	2,414,889	1.3	3,333,862	$33,232,119

PRAIRIE HAY.

Section.	Acres harvested.	Average yield per acre, tons.	Total yield, tons.	Total value.
Northeast	19,036	1.43	27,221	$176,936
Northwest	30,125	1.13	34,041	265,519
Central	10,125	1.17	11,849	88,867
Southwest	81,128	1.13	91,674	847,984
Southeast	2,313	1	2,313	21,395
State	142,730	1.17	167,098	$1,400,701

SUMMARY OF TOTAL YIELD AND VALUE OF FARM CROPS PRODUCED BY MISSOURI FARMERS IN YEAR 1912.

	Acreage.	Yield.	Value.
Corn	7,610,988	243,042,951	$104,517,350
Wheat	2,170,243	21,546,720	19,441,869
Oats	940,314	29,488,490	9,632,205
Tame hay and forage	2,414,889	3,333,862	33,232,119
Prairie hay	142,730	167,098	1,400,701
Flax	10,153	71,071	113,714
Rye	7,435	102,603	84,134
Buckwheat	1,203	30,075	29,173
Barley	729	20,412	13,268
Broom corn	3,433	1,750,830	69,125
Cotton	59,805	25,357,320	2,916,092
Potatoes	51,233	4,149,873	2,614,420
Tobacco	5,174	4,894,600	587,352
Sorghum seed	19,470	408,870	396,604
Sorghum syrup	19,470	1,693,890	880,823
Clover seed	14,854	29,700	264,400
Timothy seed	18,609	74,436	171,203
Kafir corn, millet, cowpeas, castor beans, etc	....	....	4,440,000
Miscellaneous vegetables	....	....	7,325,000
Total value of all crops	....	....	$188,129,500

CROP YIELD, 1912.

Average per acre by Crop Section.

Crop.	N. E. Sec. 20 counties.	N. W. Sec. 21 counties.	Cent. Sec. 21 counties.	S. W. Sec. 23 counties.	S. E. Sec. 29 counties.	State 114 counties.
Corn, bushels	34	35.1	36	24.5	29	31.9
Wheat, bushels	10.6	19.5	13.1	11	8.7	12.6
Oats, bushels	32	32.9	34	27	27.2	31.3
Hay: Timothy, tons	1.4	1.11	1.47	1.19	1.4	1.25
Prairie, tons	1.43	1.13	1.17	1.03	1	1.15
Clover, tons	1.7	1.7	1.8	1.5	1.6	1.66
Alfalfa, tons	3.3	3.8	3	3	3.3	3.28
Cowpeas, tons	2.2	2	1.7	1.6	1.5	1.8
Flax, bushels	....	....	8	6	....	7
Rye, bushels	12	19	14	12	12	13.8
Buckwheat, bushels	....	25	....	....	....	25
Barley, bushels	....	28	27	....	29	28
Broom corn, pounds	500	562	700	440	350	510
Cotton (lint), lbs	....	....	....	398	450	424
Potatoes, bushels	73	102	81	69	78	81
Tobacco, pounds	1,250	1,280	638	750	810	946
Sorghum, syrup, gals.	82	91	86	80	94	87
Sorghum seed, bu	30	23	20	21	12	21.2
Kafir corn, bushels	25	22	21	24	45	27.4
Cowpeas, bushels	7	6	10	10	8	8.2
Clover seed, bushels	2.15	2	2.15	2	2	2
Timothy seed, bu	4	4	4	4	4	4

AVERAGE FARM PRICE DECEMBER, 1912.

The prices given in this table are governed by local conditions and are the current local prices prevailing in the country.

	N. E.	N. W.	Central.	S. W.	S. E.	State.
Corn, per bushel	$ .417	$ .406	$ .436	$ .457	$ .466	$ .43
Wheat, per bushel	.91	.896	.895	.88	.94	.902
Oats, per bushel	.295	.316	.321	.377	.411	.328
Flax, per bushel	....	1.45	....	1.35	2.00	1.60
Timothy seed, per bushel	1.65	1.98	2.25	2.55	3.00	2.30
Clover seed, per bushel	9.55	9.00	8.25	9.75	8.00	8.90
Cowpea seed, per bushel	1.98	2.52	2.25	1.95	1.71	2.08
Sorghum seed, per bushel	.87	.71	.95	1.05	1.28	.97
Kafir corn, per bushel	.60	.60	.90	.65	.97	.74
Rye, per bushel	.76	.80	.80	.87	.89	.82
Buckwheat, per bushel	1.00	1.04	1.06	.80	....	.97
Barley, per bushel	.50	.56	1.13	.62	.46	.65
Potatoes, per bushel	.66	.64	.71	.74	.42	.63
Sweet potatoes, per bushel	1.05	1.09	.96	1.03	.84	.994
Winter apples, per bushel	.49	.48	.40	.47	.73	.51
Timothy hay, per ton	9.50	10.00	9.25	10.75	12.75	10.45
Clover hay, per ton	9.00	9.75	9.75	10.25	12.00	10.15
Alfalfa hay, per ton	14.00	12.00	11.25	13.25	14.50	13.00
Cowpea hay, per ton	8.50	5.00	9.00	10.00	12.75	9.00
Prairie hay, per ton	6.50	7.80	7.50	9.25	9.25	8.00
Broom corn brush, per ton	....	.70	.70	.96	....	.79
Cotton lint, per pound	....	....	....	.11	.12	.115
Leaf tobacco, per pound	.13	.86	.125	.13	.13	.12
*Wool, per pound	.22	.21	.21	.20	.20	.208
Comb honey, per pound	.14	.14	.13	.17	.16	.148
Mixed hay, per ton	8.75	9.50	9.00	9.75	11.75	9.75

* Price June 1.

LIVE STOCK, AVERAGE FARM PRICE PER HEAD, DECEMBER, 1912.

	N. E.	N. W.	Central.	S. W.	S. E.	State.
Horses.						
Spring colts	$58.50	$57.25	$49.00	$49.00	$50.00	$52.75
Yearlings	82.50	81.25	74.50	71.50	73.75	76.70
Two years old	107.00	109.25	100.75	94.00	98.75	101.95
Three years and over	136.25	132.00	123.00	120.00	121.00	126.50
Mules.						
Spring colts	72.75	74.00	67.00	62.75	61.00	67.50
Yearlings	98.75	101.75	90.00	86.25	84.00	92.15
Two years old	125.00	128.00	118.50	112.00	110.75	118.85
Three years and over	157.00	160.75	145.50	140.00	142.50	149.15
Cattle.						
Steer calves	22.50	21.75	19.25	14.75	12.25	18.10
Heifer calves	18.00	18.50	17.50	13.00	11.00	15.60
Yearling steers	34.00	35.25	30.00	23.75	20.00	28.60
Yearling heifers	28.75	30.50	26.25	21.00	18.00	24.90
Steers, 2 years and over	47.00	51.00	42.00	35.25	30.00	41.05
Cows 2 yrs. and over	50.75	56.75	50.00	44.00	41.25	48.55
Sheep.						
Lambs under 1 year	3.90	4.25	3.60	3.05	3.00	3.56
All other sheep	4.50	4.55	4.10	3.70	3.50	4.07

FARM PRODUCE—PRICE PER POUND, DOZEN, ETC.

	N. E.	N. W.	Central.	S. W.	S. E.	State.
Chickens.						
Average price per pound.........	$.0975	$ .093	$ .095	$ .09	$ .095	$ .094
Turkeys.						
Average price per pound.........	.15	.15	.14	.13	.14	.14
Number as compared with average year......................	.85	.88	.82	.78	.77	.82
Eggs and Butter.						
Eggs, per dozen................	.258	.236	.24	.25	.237	.244
Butter, per pound...............	.24	.26	.24	.24	.24	.24
Honey.						
Price per pound, comb...........	.14	.14	.13	.17	.16	.148

LIVE STOCK—NUMBER AS COMPARED WITH AVERAGE YEAR.

	N. E.	N. W.	Central.	S. W.	S. E.	State.
Hogs.............	.76	.62	.70	.76	.68	.70
Sheep.............	.86	.86	.79	.82	.77	.82
Cattle.............	.78	.70	.72	.79	.78	.75
Mules.............	.95	.93	.94	.96	.79	.91
Horses.............	.97	.95	.95	.98	.91	.95

LIVE STOCK—NUMBER ON FEED AS COMPARED WITH AN AVERAGE YEAR.

	N. E.	N. W.	Central.	S. W.	S. E.	State.
Hogs.............	.73	.56	.66	.69	.67	.66
Cattle.............	.70	.66	.61	.68	.69	.67
Sheep.............	.68	.72	.72	.72	.66	.70

LIVE STOCK—PER CENT OF PURE-BRED BULLS IN USE.

	N. E.	N. W.	Central.	S. E.	S. W.	State.
	.47	.56	.52	.41	.25	.44

MISSOURI LIVE STOCK.

An abstract of the assessment of horses and mules as shown by the assessors' returns June 1, 1912. (Compiled from reports of State Auditor John P. Gordon.)

County.	Horses.			Mules.		
	No.	Value.	Av.	No.	Value.	Av.
Adair	10,032	$383,145	$38.19	1,362	$50,960	$37.41
Andrew	8,955	367,860	41.07	2,366	126,695	53.34
Atchison	8,613	321,010	37.27	2,827	128,610	45.49
Audrain	9,885	393,675	39.82	5,251	257,965	49.12
Barry	12,193	316,575	25.96	3,042	98,421	32.35
Barton	8,973	353,892	39.66	3,214	135,272	42.88
Bates	14,534	538,876	37.08	4,454	182,363	49.51
Benton	8,119	266,565	32.81	2,591	102,710	39.64
Bollinger	5,090	223,505	43.91	2,793	133,310	47.73
Boone	8,922	346,460	38.83	5,914	262,070	44.31
Buchanan	6,685	303,065	45.33	2,078	138,210	66.51
Butler	3,775	151,880	40.23	2,058	85,335	41.23
Caldwell	8,650	300,080	34.69	1,951	71,785	36.79
Callaway	9,596	322,010	33.55	5,995	251,345	41.95
Camden	4,602	222,830	48.42	1,920	108,540	56.53
Cape Girardeau	5,670	236,775	42.75	2,723	126,200	46.35
Carroll	12,252	442,962	36.15	4,546	186,670	41.06
Carter	1,200	64,250	53.64	532	32,177	60.48
Cass	13,721	512,426	37.42	3,626	139,349	38.43
Cedar	8,224	284,635	34.61	2,549	92,595	36.32
Chariton	11,014	451,425	40.98	3,673	184,710	50.28
Christian	6,833	260,866	38.14	1,934	75,645	39.11
Clark	8,157	343,460	42.50	576	27,795	48.50
Clay	6,940	266,725	38.43	2,018	92,415	45.79
Clinton	5,673	185,185	32.64	1,991	98,235	49.33
Cole	3,429	128,180	37.38	1,370	70,780	51.65
Cooper	6,814	317,400	46.58	5,296	285,240	53.85
Crawford	3,879	150,805	38.87	2,056	79,900	38.86
Dade	7,148	228,963	32.03	2,790	103,856	37.22
Dallas	7,297	212,950	29.18	2,099	62,580	29.81
Daviess	11,623	427,292	36.76	3,080	116,215	37.73
DeKalb	7,868	259,113	32.92	2,008	74,160	36.93
Dent	4,788	158,287	33.05	2,040	68,401	33.52
Douglas	7,446	294,290	39.40	2,182	72,305	33.13
Dunklin	4,580	216,310	45.04	5,181	300,995	57.90
Franklin	7,383	293,175	39,85	3,293	159,145	48.34
Gasconade	3,809	155,977	40.94	2,215	98,125	44.30
Gentry	10,500	385,720	36.73	2,055	77,465	37.69
Greene	13,380	508,349	38.00	3,945	184,818	46.85
Grundy	8,686	287,488	33.10	1,827	59,645	32.10
Harrison	16,066	513,742	31.97	2,338	66,570	28.47
Henry	12,140	446,224	36.86	4,320	180,331	41.74
Hickory	6,130	232,962	38.00	1,898	76,615	40.36
Holt	6,373	284,030	44.59	2,367	138,010	58.30

MISSOURI LIVE STOCK—Continued.

County.	Horses.			Mules.		
	No.	Value.	Av.	No.	Value.	Av.
Howard	5,816	$226,530	$38.97	4,014	$199,330	$49.66
Howell	7,916	297,194	37.54	2,532	105,493	41.66
Iron	1,574	70,305	44.63	923	42,012	44.43
Jackson	22,603	877,715	38.83	4,278	246,435	57.61
Jasper	15,910	569,105	35.77	3,117	145,835	45.00
Jefferson	5,854	186,665	31.89	2,762	102,480	37.10
Johnson	14,252	570,825	40.06	5,453	229,305	42.05
Knox	8,986	325,815	36.25	1,852	61,555	33.24
Laclede	7,270	308,620	42.46	2,116	101,205	47.82
Lafayette	11,711	420,880	35.93	5,713	246,575	43.16
Lawrence	10,415	386,200	37.08	3,236	136,705	42.24
Lewis	8,279	310,213	37.47	1,979	68,055	34.39
Lincoln	7,343	342,035	46.57	3,048	117,330	38.46
Linn	12,495	376,815	30.15	2,307	76,995	33.37
Livingston	9,492	351,230	37.00	2,077	79,675	38.36
McDonald	6,035	251,940	41.74	1,524	72,470	47.55
Macon	12,286	503,255	40.96	3,214	127,505	39.67
Madison	2,270	104,645	46.00	1,353	73,690	54.46
Maries	3,797	154,705	40.74	2,070	86,140	41.61
Marion	7,533	303,025	40.22	1,569	71,860	45.79
Mercer	9,158	306,745	33.48	1,373	44,180	32.17
Miller	6,912	235,935	34.13	2,715	105,730	38.94
Mississippi	2,421	84,715	34.99	4,438	206,485	46.52
Moniteau	6,153	249,945	40.62	3,143	145,565	46.31
Monroe	10,439	409,350	39.21	4,665	194,900	41.77
Montgomery	6,175	207,115	33.54	3,495	130,005	37.19
Morgan	5,598	152,930	27.31	3,066	110,625	32.96
New Madrid	2,561	91,295	35.65	4,878	218,235	44.76
Newton	10,283	277,050	26.94	1,932	51,545	26.67
Nodaway	15,836	627,470	39.62	2,491	111,865	44.91
Oregon	4,932	169,235	34.31	2,115	77,995	36.87
Osage	4,199	144,605	34.43	2,637	122,330	46.38
Ozark	5,474	264,958	48.40	2,072	105,969	51.10
Pemiscot	2,561	100,955	39.42	4,252	194,460	45.73
Perry	4,917	164,168	33.38	3,120	115,732	37.09
Pettis	11,787	439,615	37.29	4,817	234,025	48.58
Phelps	4,542	145,660	32.70	1,821	67,248	36.92
Pike	8,213	325,260	39.60	3,416	164,420	48.13
Platte	5,194	225,520	43.41	2,716	150,860	55.54
Polk	11,438	436,517	38.16	4,072	167,130	41.04
Pulaski	4,289	149,260	34.80	1,422	56,380	39.65
Putnam	11,447	391,467	34.19	1,516	50,790	33.48
Ralls	5,310	238,965	45.00	1,613	72,595	45.00
Randolph	7,745	309,825	40.00	2,220	110,985	50.00
Ray	9,605	315,735	32.87	3,886	171,890	44.23
Reynolds	2,534	122,593	48.37	1,638	92,192	56.28
Ripley	3,624	208,870	57.64	1,564	96,910	67.95
St. Charles	7,462	342,460	45.89	3,139	168,950	53.82

MISSOURI LIVE STOCK—Continued.

County.	Horses.			Mules.		
	No.	Value.	Av.	No.	Value.	Av.
St. Clair	9,635	$314,230	$32.61	2,493	$98,535	$39.52
St. Francois	3,559	143,880	40.42	1,545	79,030	51.15
Ste. Genevieve	3,216	114,285	35.53	1,305	58,745	45.01
St. Louis	9,300	418,550	45.00	4,115	232,850	56.58
Saline	9,851	440,740	44.71	6,630	354,805	53.51
Schuyler	6,717	240,500	35.80	716	27,070	37.80
Scotland	10,622	363,845	34.26	1,165	45,560	39.10
Scott	3,755	142,545	37.96	5,146	216,521	42.07
Shannon	3,673	184,210	50.15	1,762	94,695	53.79
Shelby	9,322	344,075	36.90	3,237	106,365	32.85
Stoddard	8,032	318,198	39.61	5,192	234,227	45.11
Stone	4,671	161,680	34.60	1,468	63,450	43.20
Sullivan	12,981	409,931	31.58	2,703	78,771	29.10
Taney	4,340	225,850	52.34	1,471	85,999	58.46
Texas	9,431	321,885	34.13	3,002	115,867	38.59
Vernon	15,023	426,449	28.39	4,332	154,263	35.61
Warren	2,555	116,280	45.51	1,455	76,150	52.33
Washington	3,284	117,045	35.64	2,037	95,480	46.87
Wayne	3,366	126,375	37.44	2,154	88,330	41.01
Webster	7,445	299,160	40.18	2,687	115,965	43.15
Worth	6,578	293,225	44.57	804	41,145	51.17
Wright	8,482	305,099	25.97	2,276	82,513	36.25
St. Louis city	15,877	803,990	50.63	2,482	123,050	49.57

An abstract of the assessment of asses and jennets and cattle as shown by the assessors' returns June 1, 1912. (Compiled from reports of State Auditor John P. Gordon.)

County.	Asses and jennets.			Cattle.		
	No.	Value.	Av.	No.	Value.	Av.
Adair	62	$4,505	$72.66	18,788	$228,915	12.18
Andrew	92	5,990	65.10	19,009	318,195	16.73
Atchison	49	4,100	83.67	19,711	376,160	19.08
Audrain	225	14,360	63.82	16,614	246,070	14.81
Barry	184	7,503	40.77	19,280	174,503	9.05
Barton	105	4,740	45.14	14,855	165,294	11.12
Bates	230	11,390	49.51	22,568	278,484	12.34
Benton	114	6,770	59.38	16,859	183,705	10.89
Bollinger	77	4,950	64.28	14,370	145,159	10.10
Boone	259	12,290	47.45	15,765	235,445	14.93
Buchanan	102	5,220	51.11	12,225	220,870	18.06
Butler	26	1,170	45.00	12,503	94,250	7.53
Caldwell	89	7,010	62.58	15,005	213,290	14.21
Callaway	387	24,910	64.36	14,203	194,805	13.71
Camden	48	3,845	72.60	14,849	233,407	15.72
Cape Girardeau	109	12,350	113.30	11,210	112,015	9.99

MISSOURI LIVE STOCK—Continued.

County.	Asses and jennets.			Cattle.		
	No.	Value.	Av.	No.	Value.	Av.
Carroll	157	$8,555	$54.45	18,634	$243,074	$13.04
Carter	13	420	32.30	6,491	70,284	10.82
Cass	173	12,725	73.55	20,740	274,832	13.25
Cedar	78	6,830	87.56	13,249	163,655	12.35
Chariton	88	8,375	95.17	17,172	262,396	15.28
Christian	110	4,475	40.68	15,644	203,188	12.98
Clark	26	2,165	83.25	12,797	167,955	13.15
Clay	52	10,875	209.13	13,998	216,595	15.47
Clinton	41	3,080	75.12	17,013	273,470	16.07
Cole	40	3,465	86.62	8,607	91,130	10.56
Cooper	207	15,220	73.52	1,156	211,695	16.09
Crawford	47	1,900	40.42	11,698	137,820	11.78
Dade	145	6,899	47.58	13,349	139,111	10.42
Dallas	109	3,940	36.14	14,623	127,856	8.74
Daviess	117	10,505	89.78	19,416	239,032	12.31
DeKalb	62	3,190	51.45	16,448	229,658	13.97
Dent	124	4,288	34.55	13,201	144,903	10.97
Douglas	111	6,775	61.03	16,114	204,087	12.66
Dunklin	32	1,585	49.53	13,571	127,933	9.42
Franklin	35	3,545	101.29	13,694	204,130	14.91
Gasconade	45	2,165	48.11	9,047	90,581	10.01
Gentry	119	6,120	51.43	19,892	305,475	15.35
Greene	105	5,977	57.00	22,815	279,060	12.23
Grundy	143	8.150	57.00	16,246	211,416	13.02
Harrison	106	11,030	104,06	27,804	367,797	13.22
Henry	150	9,190	61.26	21,695	242,918	11.19
Hickory	91	6,455	70.93	12,104	137,041	11.32
Holt	54	4,200	77.77	11,779	202,020	17.15
Howard	162	11,200	69.14	12,029	185,760	15.44
Howell	106	6,790	64.05	16,606	193,128	11.63
Iron	24	1,235	51.45	5,468	57,590	10.53
Jackson	....	....	....	21,814	387,500	17.76
Jasper	87	5,480	63.00	17,069	265,030	15.50
Jefferson	45	2,200	49.11	13,614	138,885	10.20
Johnson	262	16,350	62.40	28,959	412,190	14.47
Knox	69	5,690	82.46	14,763	195,637	13.25
Laclede	123	6,330	51.46	15,039	211,825	14.08
Lafayette	118	8,545	72.41	20,424	283,155	13.86
Lawrence	158	9,450	59.81	15,273	196,715	12.91
Lewis	83	5,990	72.17	14,375	220,975	15.37
Lincoln	....	....	....	11,520	157,030	13.54
Linn	132	6,145	46.55	25,543	307,108	12.02
Livingston	106	6,328	50.50	17,472	206,209	11.80
McDonald	102	5,645	55.34	9,865	125,815	12.75
Macon	193	14,380	74.89	23,002	329,990	14.34
Madison	22	1,515	69.00	7,616	88,665	11.64
Maries	53	2,805	52.92	9,464	100,135	10.58
Marion	66	8,000	121.21	9,038	136,710	15.12

MISSOURI LIVE STOCK—Continued.

County.	Asses and jennets.			Cattle.		
	No.	Value.	Av.	No.	Value.	Av.
Mercer	71	$4,650	$65.49	18,413	$265,090	$16.08
Miller	56	4,325	77.23	14,018	152,605	10.88
Mississippi	31	1,545	49.83	5,601	55.505	9.90
Moniteau	127	8,835	69.57	10,852	132,415	12.20
Monroe	309	25,200	81.55	15,380	258,320	16.70
Montgomery	78	4,935	63.26	11,336	122,010	9.88
Morgan	81	3,880	47.90	10,640	94,745	8.90
New Madrid	14	710	50.71	9,979	52,335	5.24
Newton	92	3,910	42.50	13,778	126,450	9.17
Nodaway	92	5,430	59.02	27,328	480,625	17.59
Oregon	37	3,105	83.91	18,449	169,588	9.19
Osage	42	2,230	53.09	11,748	122,310	10.41
Ozark	74	4,810	65.00	21,640	255,989	11.83
Pemiscot	16	1,150	71.87	9,091	54,175	5.95
Perry	37	2,535	68.62	8,858	99,093	11.18
Pettis	123	6,040	49.10	22,269	322,915	14.50
Phelps	64	3,140	49.00	12,566	144,166	11.47
Pike	249	14,490	58.19	11,360	212,910	18.74
Platte	105	6,740	64.19	7,090	147,670	20.82
Polk	239	14,800	61.92	18,594	227,337	12.11
Pulaski	72	2,765	38.45	10,903	113,025	10.36
Putnam	75	3,725	49.66	22,941	325,277	14.17
Ralls	107	6,465	60.00	8,173	122,605	15.00
Randolph	164	13,130	80.00	12,097	181,400	15.00
Ray	178	16,230	91.17	14,481	239,665	16.55
Reynolds	33	1,480	44.84	13,204	148,817	11.29
Ripley	58	3,425	59.00	11,022	119,665	10.78
St. Charles	65	4,140	63.69	10,395	168,725	16.23
St. Clair	119	6,605	55.50	15,722	198,470	12.62
St. Francois	32	1,450	45.31	8,898	121,670	13.67
Ste. Genevieve	63	4,050	64.28	7,667	90,070	11.74
St. Louis	....	....	....	10,835	178,730	16.49
Saline	159	10,990	69.00	24,560	495,810	20.18
Schuyler	41	2,290	55.85	9,884	119,865	12.12
Scotland	59	3,175	53.81	16,351	214,485	13.11
Scott	26	1,935	74.42	8,662	74,430	8.59
Shannon	68	2,691	39.58	15,119	182,480	12.06
Shelby	201	13,710	68.20	12,255	179,305	14.63
Stoddard	55	3,800	69.00	18,552	159,222	8.58
Stone	83	2,960	35.60	12,318	128,190	10.40
Sullivan	121	6,321	52.24	29,393	412,935	14.04
Taney	104	4,453	42.77	17,464	253,101	14.94
Texas	239	9,662	40.42	25,244	250,425	9.92
Vernon	171	8,230	48.13	22,614	250,418	11.07
Warren	6	1,350	225.00	6,326	78,170	12.35
Washington	26	2,310	88.84	11,801	118,010	10.00
Wayne	34	1,360	40.00	14,721	141,195	9.59
Webster	156	7,310	46.85	18,460	220,557	11.54

MISSOURI LIVE STOCK—Continued.

County.	Asses and jennets.			Cattle.		
	No.	Value.	Av.	No.	Value.	Av.
Worth	67	$4,415	$65.89	11,439	$201,300	$17.59
Wright	132	7,035	53.29	16,610	201,177	12.11
St. Louis city	....	....	....	1,888	36,310	19.23

An abstract of the assessment of sheep and hogs as shown by the assessors' returns June 1, 1912. (Compiled from reports of State Auditor John P. Gordon.)

County.	Sheep.			Hogs.		
	No.	Value.	Av.	No.	Value.	Av.
Adair	10,448	$21,435	$2,05	10,838	$44,785	$4.13
Andrew	4,448	9,490	2.13	23,884	151,045	6.33
Atchison	1,849	3,770	2.03	26,150	81,780	3.12
Audrain	18,096	31,635	1.74	26,902	118,705	4.41
Barry	10,513	9,800	.93	20,797	28,188	1.35
Barton	3,335	4,207	1.26	13,752	39,835	2.90
Bates	8,270	11,651	1.49	31,082	96,169	3.09
Benton	5,934	10,965	1.81	12,393	34,805	2.80
Bollinger	9,917	13,422	1.35	22,431	38,589	1.72
Boone	10,481	25,915	2.47	19,714	55,200	2.80
Buchanan	3,102	6,240	2.00	12,787	43,430	3.39
Butler	1,508	1,570	1.04	17,968	20,155	1.12
Caldwell	8,303	12,450	1.49	14,451	50,880	3.09
Callaway	17,820	34,425	1.93	20,288	75,815	3.73
Camden	13,274	25,865	1.94	12,509	23,302	1.86
Cape Girardeau	5,825	8,985	1.54	19,883	50,685	2.55
Carroll	7,316	10,695	1.46	25,098	69,962	2.78
Carter	542	632	1.16	9,221	10,546	1.14
Cass	8,442	15,173	1.80	30,363	92,963	3.06
Cedar	6,076	7,921	1.30	23,070	45,647	1.67
Chariton	12,989	27,679	2.13	15,294	58,945	3.85
Christian	8,030	9,288	1.15	29,611	41,764	1.41
Clark	11,665	23,100	1.97	6,673	33,585	5.02
Clay	5,588	11,565	2.06	19,881	80,190	4.03
Clinton	2,705	6,640	2.45	18,586	45,970	2.47
Cole	1,855	2,240	1.20	7,661	16,750	2.18
Cooper	6,432	12,565	1.95	31,448	107,300	3.41
Crawford	5,760	11,080	1.92	11,733	23,575	2.00
Dade	6,017	6,570	1.09	20,890	47,515	2.23
Dallas	7,115	8,809	1.23	14,807	23,001	1.55
Daviess	21,407	29,899	1.35	27,275	84,765	3.10
DeKalb	4,517	8,455	1.87	18,932	69,824	3.69
Dent	8,874	8,462	.95	14,590	14,590	1.00
Douglas	9,110	20,106	2.20	30,151	42,775	1.41
Dunklin	256	262	1.10	24,908	46,224	1.86
Franklin	3,495	8,030	2.30	18,427	54,625	2.97

MISSOURI LIVE STOCK—Continued.

County.	Sheep.			Hogs.		
	No.	Value.	Av.	No.	Value.	Av.
Gasconade	2,576	$5,021	$1.94	10,579	$26,955	$2.54
Gentry	12,714	15,165	1.19	24,330	88,160	3.62
Greene	9,094	11,816	1.30	21,208	55,378	2.61
Grundy	16,417	24,318	1.42	16,036	46,726	2.91
Harrison	22,830	64,541	2.82	32,105	131,207	4.08
Henry	4,326	7,061	1.86	26,817	72,071	2.68
Hickory	5,471	8,694	1.59	8,834	19,386	2.19
Holt	738	1,860	2.51	14,880	75,480	5.07
Howard	8,722	17,190	1.97	11,583	41,220	3.55
Howell	8,595	8,746	1.02	22,671	26,301	1.16
Iron	1,796	2,188	1.21	4,991	5,848	1.17
Jackson	8,765	18,065	2.06	21,669	88,207	4.07
Jasper	4,553	8,030	1.76	17,981	54,065	3.00
Jefferson	2,004	2,285	1.14	14,415	32,235	2.24
Johnson	13,073	20,745	1.59	37,299	113,915	3.05
Knox	9,889	14,394	1.46	17,454	49,129	2.81
Laclede	10,526	16,360	1.55	13,912	42,230	3.03
Lafayette	7,115	10,660	1.49	41,458	92,805	2.23
Lawrence	5,987	10,435	1.74	20,374	51,270	2.52
Lewis	9,951	21,181	2.13	13,591	61,347	4.51
Lincoln	5,961	9,935	1.67	26,511	77,300	2.91
Linn	20,070	23,628	1.17	19,356	55,732	2.88
Livingston	9,482	14,053	1.50	17,960	63,803	3.54
McDonald	6,704	7,670	1.14	16,811	35,560	2.11
Macon	11,301	19,960	1.76	11,740	52,775	4.41
Madison	3,184	4,250	1.33	9,398	17,775	1.88
Maries	6,114	8,825	1.43	16,646	17,740	1.00
Marion	7,256	12,330	1.63	11,385	41,701	3.66
Mercer	7,212	11,820	1.63	15,386	62,578	4.01
Miller	4,436	6,520	1.47	17,847	31,505	1.76
Mississippi	206	215	1.04	14,262	29,345	2.05
Moniteau	2,964	5,880	1.98	17,211	51,715	3.00
Monroe	24,544	44,200	1.80	18,993	70,770	3.72
Montgomery	6,688	10,375	1.55	16,416	53,380	3.25
Morgan	5,738	6,340	1.10	10,454	20,200	1.93
New Madrid	185	185	1.00	13,147	13,315	1.01
Newton	1,910	2,165	1.13	12,491	25,735	2.06
Nodaway	7,505	7,500	1.00	40,532	126,040	3.11
Oregon	4,284	4,284	1.00	23,118	23,118	1.00
Osage	3,709	4,415	1.19	15,397	33,060	2.14
Ozark	5,792	8,936	1.54	19,028	25,928	1.36
Pemiscot	153	115	.75	10,645	19,531	1.83
Perry	8,214	8,225	1.00	24,600	37,183	1.51
Pettis	8,123	16,315	2.00	17,726	58,520	3.30
Phelps	5,565	6,974	1.25	10,919	16,740	1.53
Pike	8,885	18,280	2.05	13,100	61,220	4.67
Platte	4,160	11,450	2.75	9,402	45,360	4.82
Polk	11,654	16,740	1.43	25,369	60,737	2.39

MISSOURI LIVE STOCK—Continued.

County.	Sheep.			Hogs.		
	No.	Value.	Av.	No.	Value.	Av.
Pulaski	8,193	$8,660	$1.15	14,872	$16,175	$1.09
Putnam	12,413	14,176	1.14	12,404	50,086	4.03
Ralls	8,013	16,025	2.00	6,083	30,415	5.00
Randolph	10,160	20,330	2.00	5,927	29,635	5.00
Ray	6,060	10,000	1.64	22,227	81,830	3.68
Reynolds	2,152	2,417	1.12	13,344	19,711	1.47
Ripley	2,583	3,655	1.42	16,730	26,976	1.61
St. Charles	3,871	7,550	1.95	19,407	61,525	3.17
St. Clair	6,332	6,550	1.03	16,941	46,730	2.76
St. Francois	2,144	3,585	1.67	6,676	20,460	3.06
Ste. Genevieve	3,200	4,790	1.49	16,594	32,345	1.94
St. Louis	590	1,810	3.06	14,430	58,440	4.04
Saline	4,924	9,875	2.00	21,403	88,415	4.13
Schuyler	43,944	44,200	1.00	7,560	23,545	3.11
Scotland	14,200	28,095	1.97	12,722	54,970	4.32
Scott	837	1,141	1.36	16,553	34,844	2.10
Shannon	3,634	4,264	1.17	16,951	21,758	1.28
Shelby	12,126	22,415	1.84	18,508	69,130	3.73
Stoddard	2,454	2,454	1.00	34,963	34,963	1.00
Stone	7,225	8,350	1.01	17,813	31,440	1.75
Sullivan	18,265	27,494	1.50	17,447	56,076	3.20
Taney	7,079	12,448	1.75	15,892	25,028	1.57
Texas	13,565	17,943	1.32	33,726	52,638	1.32
Vernon	4,314	5,806	1.35	22,519	56,880	2.53
Warren	1,337	2,740	2.04	9,698	20,000	2.06
Washington	2,094	2,205	1.05	8,451	9,325	1.10
Wayne	3,061	5,275	1.72	17,338	33,108	1.90
Webster	6,262	9,310	1.48	17,099	33,621	1.96
Worth	8,159	12,195	1.49	11,238	46,410	4.12
Wright	16,848	20,791	1.23	25,309	32,816	1.29
St. Louis city	2	30	15.00	28	250	8.92

ANNUAL DETAILED REPORT OF DR. S. SHELDON, STATE VETERINARIAN, AND DEPUTIES, FOR YEAR, DECEMBER 31, 1911, TO DECEMBER 31, 1912.

Owner.	Postoffice.	How called.	Date.	Kind of stock.	Disease.	How disposed of.
Adolphus Garrett	Rogersville	Petition	March 4	1 horse	Chronic nasal catarrh	Not contagious.
C. J. Sims	Windsor	Phone	March 15	24 mules	Strongylus armata	Prescribed treatment.
L. H. Nance	Fristoe	Owner	April 23	1 horse	Acute glanders	Destroyed.
E. E. Swink	Farmington	Phone	May 24	2 jacks	Pneumonia	Not contagious.
W. O. Proctor	Doniphan	Application	June 7	1 cow	Tuberculosis	Quarantined.
E. F. Peterson	Reger	Application	June 26	12 cattle	Tuberculosis	Quarantined.
W. T. Barnes	Hallsville	Petition	November 17	2 hogs	Hog cholera	Not quarantined.
F. E. Powell	Hallsville	Petition	November 17	20 hogs	Hog cholera	Not quarantined.

N. B.—The above table shows only a very small part of the work of the State Veterinarian during the year. In addition to the above nearly 1,000 cattle were tested for tuberculosis in many different herds, approximately 10,000 personal letters were answered from his office.

ANNUAL REPORT OF DR. HORACE BRADLEY, DEPUTY STATE VETERINARIAN.

Owner.	Postoffice.	How called.	Date.	Kind of stock.	Disease.	How disposed of.
R. Garland	Windsor	In practice	October 16	Horse	Glanders	Quarantined.
Mr. Adee	Hermitage	S. Sheldon	September 16	4 horses	None	

ANNUAL REPORT OF DR. W. F. BERRY, DEPUTY STATE VETERINARIAN.

Owner.	Postoffice.	How called.	Date.	Kind of stock.	Disease.	How disposed of.
G. H. Downs	Carthage	By owner	April 19	2 horses	Glanders	Quarantined.
J. Gulick	Carthage	S. Sheldon	October 28	2 cows	Tuberculosis	Quarantined.

ANNUAL REPORT OF DR. L. D. BROWN, DEPUTY STATE VETERINARIAN.

Owner.	Postoffice.	How called.	Date.	Kind of stock.	Disease.	How disposed of
F. W. Nierman	Osborn	Application	January 15	4 cows	Tuberculosis	Quarantined.
I. N. Schreibern	St. Joseph	Application	January 16	1 cow	Tuberculosis	Quarantined.
C. King	St. Joseph	Application	January 16	2 cows	Tuberculosis	Quarantined.
Groux Bros	St. Joseph	Application	January 22	6 cows	Tuberculosis	Quarantined.
C. Hoffman	St. Joseph	Application	January 26	2 cows	Tuberculosis	Quarantined.
J. F. Minor	St. Joseph	Application	February 8	1 cow	Tuberculosis	Quarantined
W. Bresler	St. Joseph	Application	February 23	10 cows	Tuberculosis	Quarantined
R. Archdekin	St. Joseph	Application	February 23	10 cows	Tuberculosis	Quarantined.
J. C. Bird	St. Joseph	Application	February 23	2 cows	Tuberculosis	Quarantined.
W. Whitsell	St. Joseph	Application	February 23	2 cows	Tuberculosis	Quarantined.
W. Riggs	St. Joseph	Tick eradication work	February 22	20 cows	Tuberculosis	Quarantined.
A. J. DeShon	Kidder	Application	March 9	1 cow	Tuberculosis	Quarantined.
Forest Rose	Hemple	Application	March 15	1 bull	Tuberculosis	Quarantined.
J. G. Hawkin	Kirkwood	Application	March 23	1 cow	Tuberculosis	Quarantined.
Groux Bros	St. Joseph	Application	April 11	4 cows	Tuberculosis	Quarantined.
R. Tarwater	St. Joseph	Application	April 12	1 cow	Tuberculosis	Quarantined.
C. King	St. Joseph	Application	April 12	1 cow	Tuberculosis	Quarantined.
P. S. Miller	St. Joseph	Application	April 18	3 cows	Tuberculosis	Quarantined.
J. D. Phelps	St. Joseph	Application	April 18	1 cow	Tuberculosis	Quarantined.
F. T. Kennard	St. Joseph	Application	April 25	1 cow	Tuberculosis	Quarantined.
J. Todd	St. Joseph	Application	April 26	1 bull	Tuberculosis	Quarantined.
L. Bursten	St. Joseph	Application	May 2	1 cow	Tuberculosis	Quarantined.
W. A. Hower	Savannah	Application	May 17	1 cow	Tuberculosis	Quarantined.
E. J Woodward	Faston	Application	June 17	1 cow	Tuberculosis	Quarantined.
C. C. Hoffman	St. Joseph	Application	June 24	3 cows	Tuberculosis	Quarantined.
W. B. Phillips	Saginaw	Tick eradication work	June 12	1 cow	Texas fever	Quarantined.
John Arnold	Joplin	Tick eradication work	August 6	11 cattle	Texas fever	Quarantined.
H. M. Baker	Oronogo	Tick eradication work	August 8	10 cattle	Texas fever	Quarantined.
W. C. Whitman	Joplin	Tick eradication work	August 7	3 cows	Texas fever	Quarantined.
Frank Whitman	Joplin	Tick eradication work	August 7	1 cow	Texas fever	Quarantined.
W. J Stone	Oronogo	Tick eradication work	August 8	13 cattle	Texas fever	Quarantined.
S. E. Dunn	Joplin	Tick eradication work	August 7	2 cows	Texas fever	Quarantined.
F. Shipman	Joplin	Tick eradication work	August 6	1 cow	Texas fever	Quarantined.
J. Arnold	Joplin	Tick eradication work	August 15	11 cattle		Permit to move.

L. A. Whalin	Oronogo	Tick eradication work	August 19	24 cattle	Texas fever	Quarantined.
L. Mullin	Oronogo	Tick eradication work	August 19	9 cattle	Texas fever	Quarantined.
S. Overstreet	Joplin	Tick eradication work	August 28	5 cattle	Texas fever	Quarantined.
S. Harris	Neosho	Tick eradication work	August 30	2 cattle	Texas fever	Quarantined.
D. Turnbull	Joplin	Tick eradication work	August 7	1 cow	Texas fever	Quarantined.
Kaggs, J. S	Joplin	Tick eradication work	August 7	2 cattle	Texas fever	Quarantined.
W. S. Kirk	Neosho	Tick eradication work	August 23	17 cattle	Texas fever	Quarantined.
J. E. Stage	Joplin	Tick eradication work	August 20	34 cattle	Texas fever	Quarantined.
S. E. Dunn	Joplin	Tick eradication work	August 14	2 cattle	Texas fever	Released.
Wilson Frank	Joplin	Tick eradication work	August 12	1 cow	Texas fever	Released.
W. C. Whitman	Joplin	Tick eradication work	August 12	3 cattle	Texas fever	Released.
D. Turnbull	Joplin	Tick eradication work	August 14	1 cow	Texas fever	Released.
J. Anderson	Joplin	Tick eradication work	August 30	5 cattle	Texas fever	Released.
F. Shipman	Joplin	Tick eradication work	August 15	1 cow	Texas fever	Released.
S. E. Eads	Saginaw	Tick eradication work	September 25	15 cattle	Texas fever	Quarantined.
S. C. Sproul	Oronogo	Tick eradication work	September 26	3 cattle	Texas fever	Quarantined.
J. Arnold	Joplin	Tick eradication work	September 3	11 cattle	Texas fever	Released.
W. E. Overstreet	Joplin	Tick eradication work	September 2	5 cattle	Texas fever	Released.
P. Harms	Tipton Ford	Tick eradication work	October 17	2 cattle	Texas fever	Quarantined.
Ed Hullen	Joplin	Tick eradication work	October 11	2 cows	Texas fever	Quarantined.
C. W. Wortman	Joplin	Tick eradication work	October 8	1 cow	Texas fever	Quarantined.
L. E. Firey	Joplin	Tick eradication work	October 30	1 cow	Texas fever	Quarantined.
M. L. Mael	Sarcoxie	S. Sheldon	November 9	3 horses	Glanders	Quarantined.
S. E. Eades	Saginaw	Tick eradication work	November 18	12 cattle	Texas fever	Released.
Grimes Bros	Joplin	Tick eradication work	November 11	57 cattle	Texas fever	Released.
B. Harms	Tipton Ford	Tick eradication work	November 23	4 cattle	Texas fever	Released.
J. M. Mathis	Neosho	Tick eradication work	November 23	4 cattle	Texas fever	Released.
Joe Nash	Neosho	Tick eradication work	November 23	6 cattle	Texas fever	Released.
L. A. Whalin	Oronogo	Tick eradication work	November 25	26 cattle	Texas fever	Released.
Ed Hulen	Joplin	Tick eradication work	November 11	2 cows	Texas fever	Released.
C. W. Wortman	Joplin	Tick eradication work	November 11	1 cow	Texas fever	Released.
W. J. Stone	Oronogo	Tick eradication work	November 25			Permit for use of pasture.
Lon Mullen	Oronogo	Tick eradication work	November 25			Quarantine of pasture.
S. C. Sproul	Oronogo	Tick eradication work	November 25			Quarantine of pasture.
H. M. Baker	Oronogo	Tick eradication work	November 25			Quarantine of pasture.
L. Firey	Joplin	Tick eradication work	November 18	1 cow	Texas fever	Released.
S. Harms	Neosho	Tick eradication work	November 23	2 cattle	Texas fever	Released.
W. Riggs	Neosho	Tick eradication work	November 25	9 cattle	Texas fever	Released.
W. E. Rannie	Neosho	Tick eradication work	November 12	1 cow	Texas fever	Released.
J. E. Slage	Joplin	Tick eradication work	November 21	21 cattle	Texas fever	Released.
J. Anderson	Neosho	Tick eradication work	November 23	2 cattle	Texas fever	Released.

ANNUAL REPORT OF DR. F. M. CAHILL, DEPUTY STATE VETERINARIAN.

Owner.	Postoffice.	How called.	Date.	Kind of stock.	Disease.	How disposed of.
H. Fuellgraph	St. Joseph	In practice	April 15	1 stallion	Glanders	Quarantined.
Campbell & Winter	St. Joseph	Application	October 18	12 cattle	Tuberculosis	Quarantined.
Whitlich & Hoffman	St. Joseph	Application	November 2	2 cows	Tuberculosis	Quarantined.
Campbell & Winter	St. Joseph	Application	November 20	14 cattle	Tuberculosis	Quarantined.

ANNUAL REPORT OF DR. D. E. CRITES, DEPUTY STATE VETERINARIAN.

Owner.	Postoffice.	How called.	Date.	Kind of stock.	Disease.	How disposed of.
A. Trickery	Pocahontas	T. C. Wilson	January 27	1 horse	Glanders	Quarantined.

ANNUAL REPORT OF DR. JAMES CULLISON, DEPUTY STATE VETERINARIAN.

Owner.	Postoffice.	How called.	Date.	Kind of stock.	Disease.	How disposed of.
J. Brown	Hayti	Petition	January 23	3 mules	Dead on arrival.	
J. Brown	Hayti	Return visit	March 29	1 mare	Glanders	Quarantined.

ANNUAL REPORT OF DR. A. C. DONAHEW, DEPUTY STATE VETERINARIAN.

Owner.	Postoffice.	How called.	Date.	Kind of stock.	Disease.	How disposed of.
V. C. Drennen	Boonville	By letter	April 2	1 cow	Spinal meningitis	Died.
F. T. Walz	Boonville	By phone	September 9	85 calves (railroad wreck)	Texas fever	Quarantined.
P. Harriman	Pilot Grove	S. Sheldon	September 7	65 sheep	Forage poisoning	Change of feed.

ANNUAL REPORT OF DR. L. B. GRAHAM, DEPUTY STATE VETERINARIAN.

Owner.	Postoffice.	How called.	Date.	Kind of stock.	Disease.	How disposed of.
George Wright	Salisbury	S. Sheldon	August 10	8 cattle	Texas fever	Quarantined.
R. M. Carter	Salisbury	S. Sheldon	August 10	4 cattle	Texas fever	Quarantined.
M. G. & F. C. Nagle	Salisbury	S. Sheldon	August 10	22 cattle	Texas fever	Quarantined.
T. I. Whorton	Salisbury	S. Sheldon	August 10	20 cattle	Texas fever	Quarantined.

ANNUAL REPORT OF DR. A. J. HAMMERSTEIN, DEPUTY STATE VETERINARIAN.

Owner.	Postoffice.	How called.	Date.	Kind of stock.	Disease.	How disposed of.
F. C. Pollman	St. Louis	In practice	February 17	1 mule	Suspected glanders	Held under observation.
W. H. Hudleson	St. Louis	In practice	March 18	1 dog	Dumb rabies	Destroyed.
Fred Meyer	St. Louis	In practice	April 6	1 cow	Black leg (?)	Isolated.
Wm. Bray & Co.	St. Louis	In practice	April 15	1 horse	Nasal catarrh	Not contagious.
Outlaw Bros	St. Louis	In practice	April 25	2 horses	Glanders	Quarantined.
Outlaw Bros	St. Louis	In practice	April 27	2 horses	Latent glanders	Quarantined.
J. P. Hirth	St. Louis	In practice	May 11	1 dog	Dumb rabies	Destroyed.
Outlaw Bros	St. Louis	In practice	May 20	2 horses	Suspected glanders	Released.
M. Lammert	St. Louis	In practice	May 30	1 horse	Glanders	Quarantined.
L. Hauling & Co.	St. Louis	In practice	June 17	2 dogs	Rabies	Destroyed.
F. J. Lehmkuhl	St. Louis	In practice	June 19	1 horse	Glanders	Quarantined.

ANNUAL REPORT OF DR. E. M. HENDY, DEPUTY STATE VETERINARIAN.

Owner.	Postoffice.	How called.	Date.	Kind of stock.	Disease.	How disposed of.
J. Ruthe	Mokane	S. Sheldon	November 26	1 horse	Suspected glanders	Dead on arrival.

ANNUAL REPORT OF DR J. C. HUMPHREYS, DEPUTY STATE VETERINARIAN.

Owner.	Postoffice.	How called.	Date.	Kind of stock.	Disease.	How disposed of.
C. Ogle	Humphreys	S Sheldon	June 12	1 mule	Glanders	Quarantined.
A. B. Watson	Paris	S. Sheldon	May 7	4 cattle	Forage poisoning	Dead on arrival.

ANNUAL REPORT OF DR. A. T. KINSLEY, SUCCESSOR TO DR. R. C. MOORE AS DEPUTY.

Owner.	Postoffice.	How called.	Date.	Kind of stock.	Disease.	How disposed of.
Mutual Transfer Co	Kansas City	In practice	September 30	6 horses	Glanders	Quarantined.
J. P. Cudahy	Belton	S. Sheldon	October 11	1 cow	Tuberculosis	Quarantined.
C. L. Browning	Laredo	B. A. I. inspectors	October 12	1 bull	Suspicious tuberculosis	Quarantined.
Gudgel & Simpson	Independence	B. A. I inspectors	October 23	2 bulls	Tuberculosis	Quarantined.
J. P. Cudahy	Belton	B. A. I. inspectors	October 26	1 bull	Tuberculosis	Quarantined.
R. C. Brownlee	Holden	B. A. I. inspectors	October 30	2 bulls	Tuberculosis	Quarantined.
Depot Transfer Co	Kansas City	Owner	November 7	1 horse	Glanders	Quarantined.
N. H. Applegate	Kansas City	Owner	November 7	1 horse	Glanders	Quarantined.
John Taylor	Kansas City	Owner	November 23	1 horse	Glanders	Quarantined.
J. A. Hawk	Kansas City	Owner	November 29	1 horse	Glanders	Quarantined.
W. Johnston	Kansas City	Owner	December 9	1 cow	Tuberculosis	Quarantined.

ANNUAL REPORT OF DR. O. U. LASH, DEPUTY STATE VETERINARIAN.

Owner.	Postoffice.	How called.	Date.	Kind of stock.	Disease.	How disposed of.
Fred Bassett	Madison	In practice	December 6	1 cow	Tuberculosis	Quarantined.

ANNUAL REPORT OF DR. G. H. LEACH, DEPUTY STATE VETERINARIAN.

Owner.	Postoffice.	How called.	Date.	Kind of stock.	Disease.	How disposed of.
J. R. Evans & Brother	Maryville	In practice	February 6	1 bull	Tuberculosis	Quarantined.
Caldwell & Son	Burlington Junction	In practice	June 10	1 bull	Tuberculosis	Quarantined.
E. E. Kennel	Maryville	In practice	July 17	1 cow	Tuberculosis	Quarantined.
C. D. Bellows	Maryville	In practice	October 28	1 bull	Tuberculosis	Quarantined.
G. P. Bellows	Maryville	In practice	November 18	1 bull	Tuberculosis	Quarantined.

ANNUAL REPORT OF DR. R. B. LOVE, DEPUTY STATE VETERINARIAN.

Owner.	Postoffice.	How called.	Date.	Kind of stock.	Disease.	How disposed of.
W. H. Kistner	Norwood	S. Sheldon	January 30	2 cattle	Ergotism	Prescribed treatment.
C. S. Anderson	Richland	Dr. Sheldon	Augest 22	2 horses	Glanders	Quarantined.
Mr. Hubbell	Galloway	S. Sheldon	Septemner 11	St. L. & S. F. R. R. pens	Account Texas fever	Quarantined.
W. W. Young	Salem	Dr. Sheldon	December 22	50 cattle	Injudicious feeding	Prescribed treatment.

ANNUAL REPORT OF DR. D. F. LUCKEY, DEPUTY STATE VETERINARIAN.

Owner.	Postoffice.	How called.	Date.	Kind of stock.	Disease.	How disposed of.
Lewis Hinkle	Sikeston	S. Sheldon	March 5	4 cattle	Meningitis	Isolated.
W. C. Russell	Charleston	By phone	March 5	3 cattle	Rabies	Isolated.
Anton Bacher	Pocahontas	Petition	March 29	3 sheep, 3 cattle, 1 horse	Rabies	Isolated.

ANNUAL REPORT OF DR. BOYD MILLER, DEPUTY STATE VETERINARIAN.

Owner.	Postoffice.	How called.	Date.	Kind of stock.	Disease.	How disposed of.
C. A. Gracie	Barnett	S. Sheldon	January 25	6 horses	Cerebritis	Change of feed.

ANNUAL REPORT OF DR. R. C. MOORE, DEPUTY STATE VETERINARIAN.

Owner.	Postoffice.	How called.	Date.	Kind of stock.	Disease.	How disposed of.
W. A. Brannock	Kansas City	Owner	January 4	1 horse	Pleuritis	Not contagious.
T. Sheehy	Kansas City	Owner	January 12	2 horses	Glanders	Quarantined.
W. A. Brannock	Kansas City	Owner	January 15	1 horse	Suspected glanders	Held under observation.
W. A. Brannock	Kansas City	Owner	January 18	1 horse	Glanders	Quarantined.
E. J. Free	Kansas City	Owner	January 18	1 mule	Glanders	Destroyed.
J. F. Green	Kansas City	Owner	January 22	1 horse	Glanders	Quarantined.
W. H. Coats	Kansas City	Dr. F. F. Brown	January 22	1 horse	Glanders	Died.
J. F. Greene	Kansas City	Owner	January 24	2 horses	None	None.
R. T. Crook	Kansas City	Owner	January 25	1 mule	Injury to head	Not contagious.
E. E. Deming	Kansas City	Dr. Van Dusen	January 26	1 horse	Glanders	Quarantined.
R. W. McMillan	Kansas City	Dr. Getchel	February 7	1 horse	Glanders	Quarantined.
Globe-Woodland Laundry Co	Kansas City	Owner	February 9	1 horse	Glanders	Quarantined.
F. Kruhenmaster	Kansas City	Owner	February 13	1 horse	Glanders	Quarantined.
Harry Deutch	Kansas City	Dr. Mabie	February 19	1 horse	Glanders	Quarantined.
Berkowitz Env. Co	Kansas City	Owner	February 24	1 horse	Empyema	Not contagious.
Harriman Ross	Kansas City	Owner	February 24	1 mule	Glanders	Quarantined.
Arthur Johnson	Kansas City	Owner	March 25	1 horse	Glanders	Quarantined.
F. J. Courtwright	Kansas City	Dr. Getchel	April 6	2 horses	Glanders	Quarantined.
T. Sheehy	Kansas City	Owner	April 9	1 horse	Glanders	Quarantined.
Grant Henry	Kansas City	Police department	April 16	1 horse	Empyema	Not contagious.
Unknown	Kansas City	Humane officer	May 1	1 horse	Doubtful	Escaped before arrival.
J. L. Brewster	Kansas City	Owner	May 3	1 horse	Skin disease	Not contagious.
Henry Dale	Nashua	T. C. Wilson	May 25	Sheep	Pneumonia	Not contagious.

ANNUAL REPORT OF DR. A. J. MUNN, DEPUTY STATE VETERINARIAN.

Owner.	Postoffice.	How called.	Date.	Kind of stock.	Disease.	How disposed of.
J. M. Reynolds	Fayette	S. Sheldon	July 24	79 sheep	Scabies	Quarantined.
H. K. Given	Fayette	S. Sheldon	August 5	2 cows	Tuberculosis	Quarantined.
George Reynolds	Higbee	T. C. Wilson	September 18	30 horses	None	None.

ANNUAL REPORT OF DR. WALTER E. NEIL, DEPUTY STATE VETERINARIAN.

Owner.	Postoffice.	How called.	Date.	Kind of stock.	Disease.	How disposed of.
Chas. Still	Kirksville	S. Sheldon	April 16	1 bull	Tuberculosis	Quarantined.
Kinloch Farm	Kirksville	Owners	June 29	23 cattle	Tuberculosis	Quarantined.
Ed Gates	Callao	S. Sheldon	July 5	1 cow	None	None.
Henry Snelling	Knox City	S. Sheldon	August 31	6 calves	Blackleg	All dead.

ANNUAL REPORT OF DR. F. W. O'BRIEN, HANNIBAL, MO.

Owner.	Postoffice.	How called.	Date.	Kind of stock.	Disease.	How disposed of.
S. Robertson	Frankford	T. C. Wilson	September 21	Cattle	Meningitis	Noncontagious.

ANNUAL REPORT OF DR. E. E. PEACOCK, DEPUTY STATE VETERINARIAN.

Owner.	Postoffice.	How called.	Date.	Kind of stock.	Disease.	How disposed of.
J. H. Hawkins	Watson	By sheriff	December 12	1 mule, 4 horses	Coryza	Not contagious.

ANNUAL REPORT OF DR. H. J. SEBAUGH, DEPUTY STATE VETERINARIAN

Owner.	Postoffice.	How called.	Date.	Kind of stock.	Disease.	How disposed of.
C. S. Vance	Ironton	S. Sheldon	January 25	4 horses, 1 mule	Suspected glanders	None found.
Frank Turnbull	Mine Lamotte	S. Sheldon	August 21	Hogs	Cholera	Advised vaccination.

ANNUAL REPORT OF DR. H. C. TUCK, DEPUTY STATE VETERINARIAN.

Owner.	Postoffice.	How called.	Date.	Kind of stock.	Disease.	How disposed of.
R. M. Waller	St. Joseph	Application	January 9	1 cow	Tuberculosis	Quarantined.
R. A. Hall	St. Joseph	Application	January 19	5 cattle	Tuberculosis	Quarantined.
G. W. Patton	Cosby	Application	January 24	1 bull	Tuberculosis	Quarantined.
Anna E. Schneider	Cosby	Application	January 22	17 cattle	Tuberculosis	Quarantined.
Fulton Harris	Cosby	Application	January 24	1 cow	Tuberculosis	Quarantined.
E. X. Schneider	Cosby	Application	January 26	1 cow	Tuberculosis	Quarantined.
John Kirshner	St. Joseph	Application	February 9	3 cows	Tuberculosis	Quarantined.
C. R. Woodson	St. Joseph	Application	February 9	1 cow	Tuberculosis	Quarantined.
L. L. Bartlett	St. Joseph	Application	February 19	1 cow	Tuberculosis	Quarantined.
J. B. Hall	St. Joseph	Application	February 19	2 cows	Tuberculosis	Quarantined.
C. E. Simmons	St. Joseph	Application	February 22	2 cows	Tuberculosis	Quarantined.
J. Laderoute	St. Joseph	Application	February 27	1 cow	Tuberculosis	Quarantined.
Mrs. C. Riggs	St. Joseph	Application	March 5	1 cow	Tuberculosis	Quarantined.
H. A. Hall	St. Joseph	Application	April 20	2 cattle	Tuberculosis	Quarantined.
M. L. Burkhard	Seneca	Tick eradication work	May 9	4 cattle	Tuberculosis	Quarantined.
A. H Williams	Anderson	Tick eradication work	May 10	35 cattle and pasture	Texas fever	Quarantined.
J. F Lafon	Tiff City	Tick eradication work	May 14	1 cow and pasture	Texas fever	Quarantined.
Bertie Williams	Tiff City	Tick eradication work	May 15	2 cows and pasture	Texas fever	Quarantined.
Joe Nash	Neosho	Tick eradication work	May 20	7 cattle and pasture	Texas fever	Quarantined.
J. F. Stinson	Southwest City	Tick eradication work	May 21	1 cow and pasture	Texas fever	Quarantined.
R. A. Miller	Tiff City	Tick eradication work	June 20	3 cattle and pasture	Texas fever	Quarantined.
Jas. Denton	Southwest City	Tick eradication work	June 29	2 cattle and pasture	Texas fever	Quarantined.
J. Wilmeth	Tiff City	Tick eradication work	July 27	3 cattle and pasture	Texas fever	Quarantined.

J. A. Roark	Seneca	Tick eradication work	July 25	17 cattle and pasture	Texas fever	Quarantined.
T. J. Jordan and neighbors	Hermitage	S. Sheldon	July 25	Cattle	Forage poisoning	Not contagious.
Mary E. Kellog	Seneca	Tick eradication work	August 20	6 cattle and pasture	Texas fever	Quarantined.
B. Yokum	Seneca	Tick eradication work	August 20	6 cattle and pasture	Texas fever	Quarantined.
R. A. Miller	Tiff City	Tick eradication work	September 6	4 cattle and pasture	Texas fever	Quarantined
A. J. Oliver	Southwest City	Tick eradication work	September 16	12 cattle and pasture	Texas fever	Quarantined.
W. Tucker	Seneca	Tick eradication work	September 18	10 cattle and pasture	Texas fever	Quarantined.
A. B. Shields	Southwest City	Tick eradication work	September 25	2 cattle and pasture	Texas fever	Quarantined.
C. B. Rose	Southwest City	Tick eradication work	October 5	72 cattle and pasture	Texas fever	Quarantined.
Doran & Langston	Menter	S. Sheldon	September 30	4 carloads cattle	None	None.
Richard Kissee	Ozark	Tick eradication work	September 30	97 cattle	None	None.
G. V. Paynor	Southwest City	Tick eradication work	October 12	4 cattle and pasture	Texas fever	Quarantined.
J. W. Hall	Southwest City	Tick eradication work	October 15	5 cattle and pasture	Texas fever	Quarantined.
Jas. Ebert	Seneca	Tick eradication work	October 15	5 cattle and pasture	Texas fever	Quarantined.
G. B. Durham	Seneca	Tick eradication work	October 16	3 cattle and pasture	Texas fever	Quarantined.
W. L. Evans	Southwest City	Tick eradication work	October 23	66 cattle and pasture	Texas fever	Quarantined.
W. C. Hardy	Southwest City	Tick eradication work	October 23	57 cattle and pasture	Texas fever	Quarantined.
J. B. Poland	Southwest City	Tick eradication work	October 26	5 cattle and pasture	Texas fever	Quarantined.
M. C. Talbot	Summerville	S. Sheldon	October 31	80 cattle	None	No infection.
M. M. Brown	Cassville	Tick eradication work	November 7	30 cattle and pasture	Texas fever	Quarantined.
W. A Craig	Cassville	S. Sheldon	November 7	19 cattle	Texas fever	Quarantined.
E. W. Kuhn	Seneca	Tick eradication work	November 9	21 cattle and pasture	Texas fever	Quarantined.
S. H. Sirkle	Seneca	Tick eradication work	November 9	25 cattle and pasture	Texas fever	Quarantined.

ANNUAL REPORT OF DR. H. C. UTLEY, DEPUTY STATE VETERINARIAN.

Owner.	Postoffice.	How called.	Date.	Kind of stock.	Disease.	How disposed of.
J. M. Bowell	Green Castle	Dr. Sheldon	April 15	4 horses	Suspected glanders	Held under observation; released.

ANNUAL REPORT OF DR. E. B. WARD, DEPUTY STATE VETERINARIAN.

Owner.	Postoffice.	How called.	Date.	Kind of stock.	Disease.	How disposed of.
J. M. Dunn	McCredie	T. C. Wilson	September 18	Horses and mules	Indigestion	Change of feed.

ANNUAL REPORT OF DR. H. C. WARD, DEPUTY STATE VETERINARIAN.

Owner.	Postoffice.	How called.	Date.	Kind of stock.	Disease.	How disposed of.
Oscar Beeler	St. Joseph	Application	January 8	2 cattle	Tuberculosis	Quarantined.
C. F. Oldman	St. Joseph	Application	January 8	1 cow	Tuberculosis	Quarantined.
Emma Lendy	St. Joseph	Application	January 19	1 cow	Tuberculosis	Quarantined.
A. P. Richards	Agency	Application	January 20	1 cow	Tuberculosis	Quarantined.
Campbell & Winter	St. Joseph	Application	January 29	8 cows	Tuberculosis	Quarantined.
M. M. Hall	St. Joseph	Application	January 29	5 cows	Tuberculosis	Quarantined.
R. Goerke	St. Joseph	Application	January 25	1 cow	Tuberculosis	Quarantined.
E. O. Waller	St. Joseph	Application	February 10	1 cow	Tuberculosis	Quarantined.
A. C. Duncan	St. Joseph	Application	February 15	1 cow	Tuberculosis	Quarantined.
E. C. Hendricks	St. Joseph	Application	February 21	8 cows	Tuberculosis	Quarantined.
S. R. Head	Hannibal	Application	March 2	1 cow	Tuberculosis	Quarantined.
S. T. Walker	Fulton	Application	March 22	12 cattle	Tuberculosis	Quarantined.
H. D. Quigg	Marshall	Application	March 30	3 cows	Tuberculosis	Quarantined.
F. Bangerter	St. Joseph	Application	April 22	1 cow	Tuberculosis	Quarantined.
John Jann	St. Joseph	Application	April 22	1 cow	Tuberculosis	Quarantined.
Simon Tschanz	Savannah	Application	May 2	2 cows	Tuberculosis	Quarantined.
C. Moschberger	Cosby	Application	May 24	2 cows	Tuberculosis	Quarantined.
F. L. Reynolds	DeKalb	Application	June 13	1 cow	Tuberculosis	Quarantined.
Brown & Leonard	St. Joseph	Application	June 22	1 cow	Tuberculosis	Quarantined.
B. F. Donaldson	St. Joseph	Application	June 22	1 cow	Tuberculosis	Quarantined.
Alford & Lon Zahlers	St. Joseph	Application	June 24	9 cows	Tuberculosis	Quarantined.
J. G. Weisenthorn	St. Joseph	Application	July 3	2 cows	Tuberculosis	Quarantined.
Rolla Oliver	St. Joseph	S. Sheldon	July 29	48 cattle	Suspected tuberculosis	Tested and released.
E. C. Hendricks	St. Joseph	Application	August 19	1 cow	Tuberculosis	Quarantined.
John Jann	St. Joseph	Application	August 22	7 cattle	Suspected tuberculosis	Tested and released.

E. C. Hendricks	St. Joseph	Application	August 29	2 cows	Tuberculosis	Quarantined.
Campbell & Winter	St. Joseph	Application	August 30	19 cattle	Tuberculosis	Quarantined.
R. Archdekin	St. Joseph	Application	September 4	20 cattle	Suspected tuberculosis	Tested and released.
Mrs. Anna Schneider	St. Joseph	Application	September 7	4 cattle	Tuberculosis	Quarantined.
A. C. Dow	Sedalia	Application	October 11	1 bull	Tuberculosis	Quarantined.
W. S. Snyder	Kirkwood	Application	October 24	4 cows	Tuberculosis	Quarantined.
C. D. Boisselier	Chesterfield	Application	October 28	7 cows	Tuberculosis	Quarantined.
E. E. Bouldin	Hughesville	Application	November 16	1 cow	Tuberculosis	Quarantined.
G. R. McGary	Sedalia	Application	November 21	1 cow	Tuberculosis	Quarantined.
F. L. Read	Sedalia	Application	November 21	1 cow	Tuberculosis	Quarantined.
W. A. McNutt	Sedalia	Application	November 23	1 cow	Tuberculosis	Quarantined.
Fred Krass	Sedalia	Application	November 29	1 cow	Tuberculosis	Quarantined.
E. E. Bouldin	Hughesville	Application	November 30	3 cows	Tuberculosis	Quarantined.
R. A. Standley	Sedalia	Application	November 30	1 cow	Tuberculosis	Quarantined.
T. C. Rose	Springfield	Application	December 9	1 cow	Tuberculosis	Quarantined.
J. W. Watts	Rogersville	Application	December 12	1 cow	Tuberculosis	Quarantined.
J. C. Thompson	Springfield	Application	December 14	2 cows	Tuberculosis	Quarantined.

ANNUAL REPORT OF DR. F. A. WOLFE, DEPUTY STATE VETERINARIAN.

Owner.	Postoffice.	How called.	Date.	Kind of stock.	Disease.	How disposed of.
Wm. Brown	Linneus	Owner	February 8	1 horse	Glanders	Quarantined.
Wm. P. Gooch	Browning	S. Sheldon	February 17	1 horse	Glanders	Quarantined.
Wm. P. Gooch	Browning	Owner	February 20	None	None	Visit to disinfect premises.
N. Neely	Browning	V. C. Bartlette	March 2	1 horse	Nasal catarrh	Not contagious.
George Bell	Linneus	Owner	August 27	1 horse	Glanders	Quarantined.
Isaac Solomon	Marceline	H. Holley	September 23	1 horse	Glanders	Quarantined.
Tom Lay	Meadville	Owner	October 23	1 bull	Scabies	Quarantined.

LIVE STOCK SHIPMENTS TO AND FROM MISSOURI.

(S. Sheldon, State Veterinarian.)

Below we give a tabulated record of the shipments of horses and cattle, principally in emigrant outfits, from Missouri into other states and vice versa.

Missouri requires all shipping permits to be made in triplicate, one copy attached to the waybill, one forwarded to the State veterinarian or sanitary officer in charge at destination and a copy filed with the State Veterinarian at Columbia, Mo. The above is true of the different states, yet it will be noted on comparison that only a few of them are keeping an accurate record.

Number of horses and cattle shipped from Missouri into other states during the year 1912:

	State.	Horses.	Cattle.	Total.	Number of shipments.
1	Alabama	196	....	196	8
2	Arizona	19	41	60	14
3	Arkansas	680	55	735	101
4	California	125	25	150	16
5	Colorado	90	64	154	28
6	Georgia	1	....	1	1
7	Idaho	23	14	37	9
8	Indiana	....	3	3	1
9	Iowa	206	110	316	77
10	Kansas	441	332	773	158
11	Kentucky	....	10	10	3
12	Louisiana	62	1	63	8
13	Maryland	5	2	7	3
14	Michigan	....	25	25	1
15	Minnesota	14	7	21	6
16	Mississippi	192	....	192	8
17	Montana	151	70	221	73
18	Nebraska	279	107	386	94
19	New Mexico	21	54	75	15
20	New York	11	3	14	3
21	North Dakota	51	15	66	8
22	Oklahoma	588	42	630	132
23	Oregon	1	....	1	1
24	South Carolina	53	....	53	2
25	South Dakota	136	12	148	20
26	Tennessee	28	1	29	2
27	Texas	620	72	692	141
28	Washington	3	14	17	5
29	Wisconsin	14	....	14	2
30	Wyoming	52	157	209	13
31	Mexico	3	22	25	4
32	Central America	....	1	1	1
	Totals	4,078	1,308	5,386	923

Records of horses and cattle shipped from other states into Missouri that have been filed with the State veterinarian.

	State.	Horses.	Cattle.	Total.	Number of shipments.
1	Arkansas	118	10	128	11
2	Colorado	11	7	18	3
3	Idaho	9	....	9	1
4	Illinois	139	304	443	68
5	Indiana	2	2	4	2
6	Iowa	229	137	366	97
7	Kansas	5	39	44	10
8	Kentucky	....	36	36	2
9	Minnesota	13	....	13	3
10	Nebraska	222	205	427	70
11	New York	1	....	1	1
12	North Dakota	....	3	3	2
13	Oklahoma	113	28	141	24
14	South Dakota	....	4	4	1
15	Tennessee	65	54	129	6
16	Texas	3	....	3	1
17	Utah	....	1	1	1
18	Wisconsin	....	23	23	9
	Totals	930	853	1,783	312

N. B.—For convenience in tabulating, mules have been classfied as horses.

TOTALS ON TUBERCULIN WORK FOR 1912.

Number of healthy cattle tested and tagged by State	....	9,291
Number of healthy cattle tested by Government	....	4,976
Total	....	14,267
Number of cattle condemned by State	314	
Number of cattle condemned by Government	91	
Total	....	405
Number of healthy cattle tested and not tagged by State	682	
Number of diseased cattle tested and not tagged by State	23	
Total	....	705
Number of cattle, diseased and healthy, tested by State and Government	....	15,377
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N. B.—The State used the intradermal test exclusively in the above work.

Below we give the number of cattle shipped or driven into Missouri during the year 1912 on affidavit that they would be used only for pasturing, feeding or immediate slaughter, and were admitted as above without the tuberculin test. All cattle intended for dairy and breeding purposes must be tuberculin tested before entering Missouri.

For the year 1912, the number of cattle admitted as above was 417,493.

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